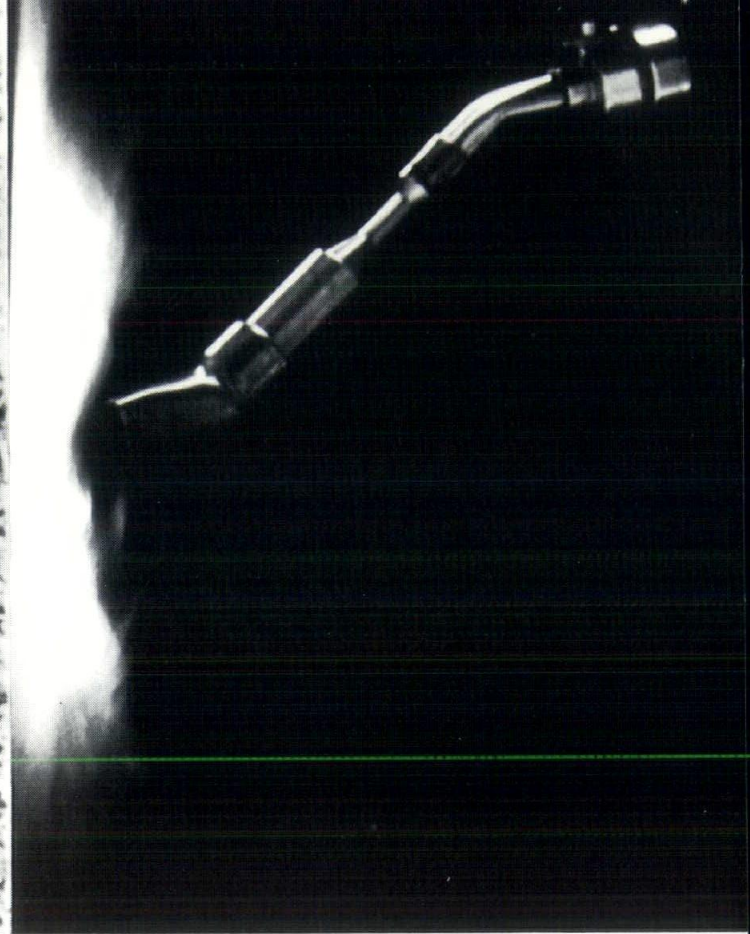
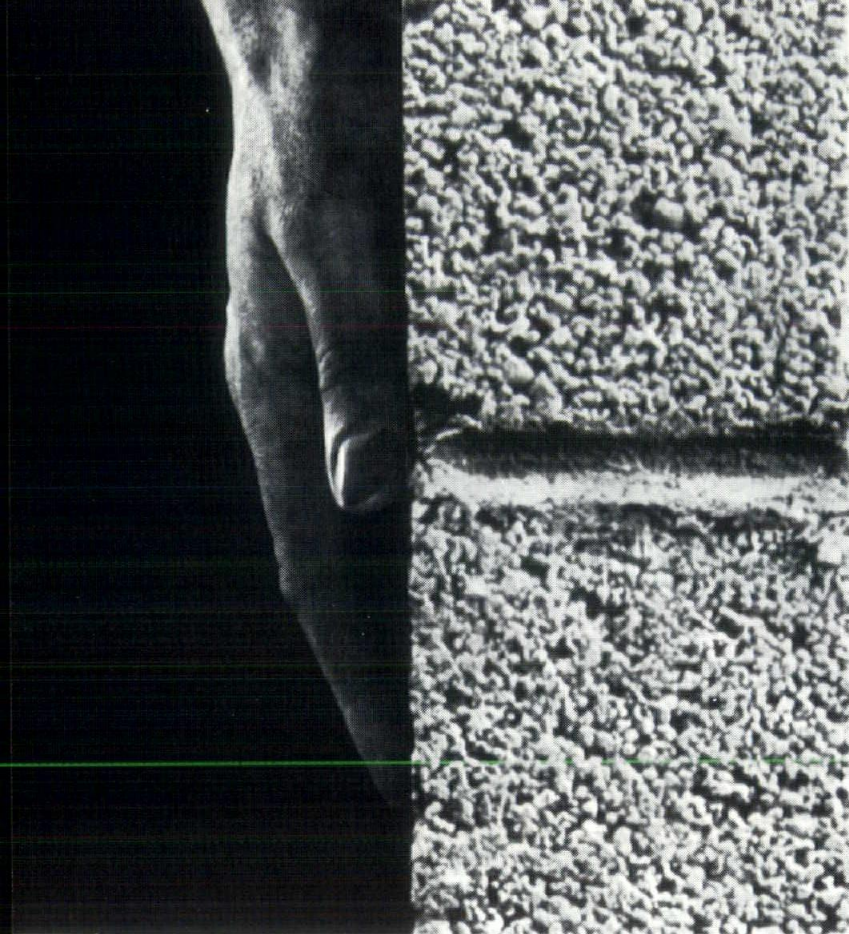


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• vol. 28 no. 3 •

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In this issue,

In addition to the presentation of the winners in the recently completed Rancho San Miguel vacation house competition (pages 15-18) is a history of the preservation efforts made over the past decades on St. Francis of Assisi Church at Ranchos de Taos. This venerable New Mexico church has undergone some lamentable, but more importantly, praiseworthy preservation efforts, all of which were done by loving and dedicated people, whose uppermost wish was to preserve and protect this fragile artifact of New Mexico's hispanic heritage. The methods and techniques used seemed right and proper at the time. In spite of and thanks to those methods it survived and stands today well and proud.

To the parishioners of St. Francis of Assisi the citizens of New Mexico and this nation owe a most warm and sincere debt of gratitude.

□ □ □ □

In the past issue of **NMA** I expressed an opinion, which was (is) in direct opposition to the position taken by national AIA and subsequently by the Board of Directors of the New Mexico Society of Architects. Reaction, by telephone and personal conversation, to that editorial has varied from support, through qualified support to strong opposition. I received but one letter on the subject. It came from a prominent member of the architectural profession. The letter is succinct; it expresses the writer's opinion in one sentence: "You are right John, you should be fired [as editor of this magazine] and return the fellowship medal we (AIA) gave you for your service to the profession."

□ □ □ □

We acknowledge with gratitude the contributions of Summit Construction, Inc. who make possible the cover for this issue of **NMA**. The photograph was furnished by Vaughn/Wedeen Creative, Inc.

JPC

 The Editor's Column 3

A 1910 Albuquerque Bungalow 7
by Robert R. White

Restoration Work at St. Francis of Assisi, Ranchos de Taos 10
Van Dorn Hooker, FAIA

Rancho San Miguel 15
Architectural Design Competition
Purpose of Competition
Design Program

New Mexico Architectural Foundation 19

Professional Directory 20

Advertiser's Index 22

(Cover—Sunwest Bank, Downtown Albuquerque, designed by Stevens, Mallory, Pearl & Campbell—Stephen Marks, Photographer)

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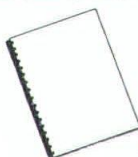
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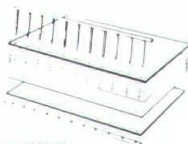
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A 1910 Albuquerque Bungalow with an Alvarado Dormer Window

by Robert R. White



Julius Mandell was 15 years old in 1903 when he left his native Alsace-Lorraine and journeyed to Albuquerque, New Mexico. His immigration was sponsored by a distant relative, Sol Weiller, who gave him a job at the clothing firm of Weiller and Benjamin.

Mandell quickly rose to a position of importance in the Albuquerque business community. Besides being a good businessman, Mandell had the advantage of being related to men who were not only leaders in the Jewish community but who held positions of importance in commerce and politics. Among such relatives was his uncle, Michael Mandell, who owned a large clothing store and was mayor of Albuquerque from 1890 to 1891. Julius Mandell opened his own clothing store in 1907. It was first known as Mandell, Myer & Co.; some years later it became Mandell, Dreyfuss & Co., and when the firm finally ended business in 1971, it was known simply as Mandell's.

On July 1, 1907, Mandell married Marie Benjamin, who was the younger sister of the junior partner of the firm of Weiller and Benjamin, where he had been working. The young couple lived at 600 2nd Street at a boarding house run by Marie's mother, but with a new store and a new bride, Mandell began thinking of a more suitable place to live. In 1908 he purchased a lot on 12th Street across from the home of Michael Mandell.

In 1910, Julius Mandell built a home on

his lot at 315 12th Street, NW. The house is a substantial brick bungalow, with blue-brick accents in a mostly red-brick facade. Mandell's son, Joe, who still lives in the house, states that the contractor, Frank A. Stephens, built the house for \$4200 but underestimated the cost of the blue brick and went broke with two rooms upstairs left unfinished (they have remained unfinished).

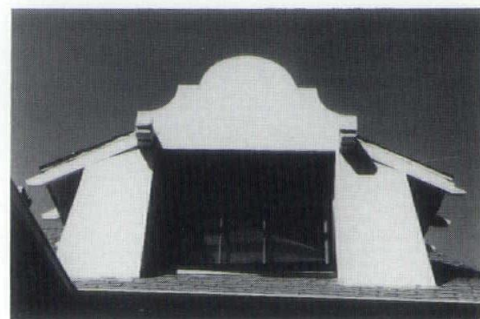
The Mandell house is in most respects similar to bungalows built elsewhere in 1910. What sets this house apart, however, is that it has a prominent dormer window that seems to have been directly inspired by Albuquerque's Mission-style Alvarado Hotel. This may have been the first domestic use of a Mission-style feature in the city. Another feature that was derived from the Alvarado is the quatrefoil vent in the gable over the front door (although this is not strictly a Mission Revival feature).

Julius Mandell did not leave any record as to why he united two such disparate styles in the construction of his house. It is possible, though, to propose a theory that might satisfactorily explain why this event is of special significance in Albuquerque's architectural history. When Mandell decided to build his house in 1910, he no doubt thought that a brick bungalow was the only proper house for a man of his standing in the community. However, he (or conceivably, his builder) probably saw the Alvarado Hotel every day and admired its architecture, and while not fully accepting

the possibility of building a home in the Mission style, decided that a minor feature or two derived from the Alvarado would be an appropriate addition to his home. The construction of this home, then, represents a transitional phase in the gradual acceptance of regional building styles in Albuquerque.

By the 1920's, the dominant domestic building styles in Albuquerque included Mission Revival, Pueblo Revival, Territorial Revival, Southwest Vernacular, and Mediterranean variations. But in 1910, Albuquerque architectural design generally took its inspiration from what was popular on the East Coast and in the Mid-West. The Alvarado Hotel was built in 1902 and Hodgin Hall at the University of New Mexico was redesigned in Pueblo Revival style in 1908, but it was not until World War I that the construction of such buildings as Carlos Vierra's house and the Museum of Fine Arts in Santa Fe brought about a widespread acceptance of southwestern building styles. Julius Mandell's ideas about house design were thus a decade ahead of his time, and he should be given credit as one of the first proponents of southwestern building styles in the early years of this century. R.W.

Robert R. White is a hydrologist and historian living in Albuquerque. His book, "The Taos Society of Artists", was published in 1983 by the University of New Mexico Press in conjunction with Historical Society of New Mexico.



Mission-style dormer window on the Mandall house. Photo by Robert R. White, March 1987.



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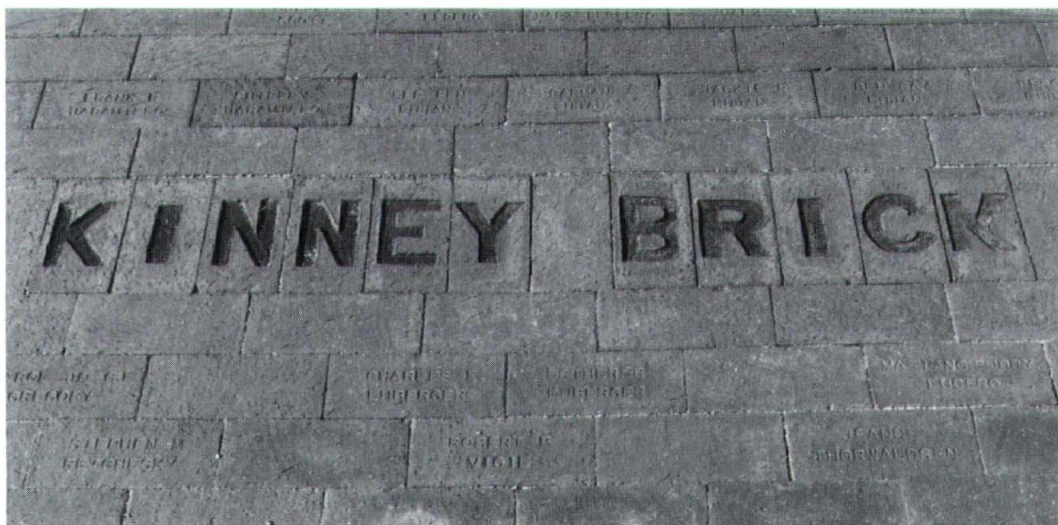
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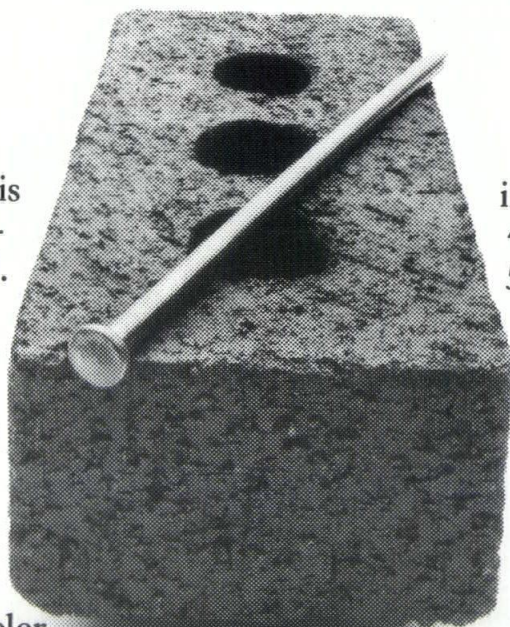
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Restoration Work at St. Francis of Assisi, Ranchos de Taos

The Church of Saint Francis of Assisi, Ranchos de Taos, has gone through many remodelings and alterations since it was built in the early part of the nineteenth century. The most drastic changes, however, have taken place within the last twenty years. Fortunately, it was one of the first groups of historic structures measured and recorded by the Historic American Buildings Survey (HABS) in March, 1934. Beautifully executed drawings, with interesting notes, give a very accurate account of what the church was like at that time.

In 1936, George Kubler began his study of the seventeenth and eighteenth century churches of New Mexico which culminated in the publication of *The Religious Architecture of New Mexico* in 1940. So, he saw St. Francis Church soon after the HABS survey was made. He says in the Preface to the first edition:

"Most of the churches of the seventeenth century have been destroyed, and later monuments have undergone frequent repair and remodeling. For the villagers to rebuild a sacristy, enlarge the windows, or alter the silhouette of a parapet was the matter of a few days' work, and more often than not, no record was made of such changes in the fabric."

Writing more specifically about the Ranchos de Taos church he states:

"Since the American occupation of the territory, the churches still in use have suffered great changes in the number, size and location of openings. The custom of remodelers has been to increase by two or three times the size of already existing openings, usually bringing their sills closer to the ground. Complementary openings are often pierced through the opposite nave wall. The openings have often been recut, in pointed neo-Gothic shapes as at Ranchos de Taos."

The numerous heavy wall buttresses which surround the flanks of many of the churches undoubtedly answer certain structural needs. On the other hand, the number and size of the buttresses of Ranchos de Taos, for instance, soften and amplify the silhouette of the building. The function of the buttressing could be satisfied with less material in more commonplace shapes; actually, the

buttressing seems to satisfy certain formal rather than structural needs."

Certainly, in the case of this church, there are almost no records of remodeling work on the building until the twentieth century. Comparison of old drawings and photographs is about all there is to work from. It can be determined from 1914-15 photographs that the buttresses as we know them today were in place, and the church walls followed pretty much today's configuration. The crude wooden bell towers were replaced, a precast concrete coping was placed on top of the parapets and a wood floor installed, all with local labor, under the direction of Father Giraud, Pastor at Taos from 1904 to 1934. Ranchos de Taos became a parish in 1935. The transept and sanctuary were reroofed in 1930-31.

The notes on the HABS drawings state that a new wood floor had been laid over the original adobe floor in all the church except the choir loft, which is shown in detail as being still an adobe floor supported on wood planks over vigas. The surveyor states that the new wood floor is irregular and pitches toward the transept. He also notes that the original bell had been replaced with a modern one. It was mentioned that the only original vigas remaining which date from about 1810, are in the nave. A new ceiling had been laid over the old vigas within the previous ten years; the vigas and ceiling of the transept were probably replaced at the same time. New vigas and ceiling were put in the sacristy in 1916. The surveyor comments that the roof is leaking badly.

The first major modification done post mid-century was the removal of the wood floor in the church and the replacement of it with a concrete one. The adobe floor in the balcony gave place to simple wood planks. The building had been wired for electricity, and most of the wires were mounted on the wall and ceiling surfaces. The church was heated with gas-fired blower units suspended at the choir loft. The pipes and vents were exposed.

During the early years of the church, it was the custom for the parishioners to replaster the exterior walls with mud every year or two; but after World War II this became less frequent. In the September-October 1963 issue of *NEW MEXICO ARCHITECTURE* there was an article by the editor about the poor condition of the plaster. The article stated that "the parishioners, faced with perpetual maintenance

Van Dorn Hooker, FAIA



Photo courtesy of the Museum of New Mexico

*Church, Ranchos de Taos,
New Mexico: Replastering
around 1940.*

problems inherent in adobe construction, have decided to protect the church with a coating of stucco." He decried this decision and appealed to architects and other readers to send money to the editor of the magazine to pay for replastering with mud. No funds were received.

In late summer 1966, the roof had deteriorated to the point that it had to be replaced; so John Gianardi, a contractor from Santa Fe, was employed to reroof the entire church. When he removed the existing roofing material, which was in very poor condition, he found that there was as much as an eight inch layer of earth on top of the roof deck. Upon removing the earth, he found that about half of the upper part of the deck boards had rotted away and that the vigas over the nave were rotten to about half their depth at mid-span. Where the vigas rested upon the outside walls, there was almost nothing left of them in some cases. The Archdiocese was notified of the seriousness of the problem, and thereupon Monsignor Francis Reinberg, acting for the Archbishop, appointed George Wright of Albuquerque as the architect to advise what to do about the roof. Wright immediately ordered shoring to be placed under the first five vigas in the nave next to the transept, the removal of all dirt on the roof, and an inspection of all roof decks and vigas in the church.

It was clear from just a brief inspection of the church that there were many other problems caused by neglect, so Wright was asked to prepare

a report on the condition of the whole building and recommend what steps should be taken to restore it. A few days later he made his report to the Archbishop. It offered four alternatives: (1) Abandon the church, do nothing to maintain it. This implied building a new church; (2) Partially restore the church and get by with piecemeal repairs; (3) Turn the building over to the National Park Service for designation as a national monument; or (4) start a full-fledged program of restoration and maintenance.

The report contained specific recommendations if the fourth alternative was accepted. They included replacing rotted vigas and roof deck; removing earth fill on the roof and replacing it with light-weight insulation and in so doing, improving the roof drainage pattern; either stucco the exterior or use mud plaster treated with a water-proofing agent; rebuild the bell towers; recess all exposed electrical wiring into the walls; protect the buttresses; replace the confessionals; and install a new heating system.

It was decided to begin a full program of restoration; so Gianardi, who was rebuilding the roof, was employed to do the rest of the work.

Investigation by the architect showed that all the vigas over the nave, probably the original vigas, had to be replaced. Since it was quite late in the year, there weren't timbers of the diameter and length required on the local market, nor could they be cut and hauled out of the forest. Gianardi found some logs that had been cut for

use as utility poles, which would meet the specifications, at a mill near Eagle Nest; but they had already been creosoted. Since the roof had been removed and winter was approaching, it was imperative to complete the roof; therefore, the creosoted logs were bought and put in place. At the same time, some of the corbels were replaced. In a report made in January 1967, Kent Stout, an associate of Wright who did the drawings, specifications and most of the inspection, noted a strong creosote odor in the nave. This odor eventually disappeared.

On February 2, 1967, the *TAOS NEWS* ran a front-page story with the headline: "Church Restoration Stirs Passions" and a sub-heading: "Controversy Swarms Over Hardplastering." The article by Leslie Bottroff said the decision to "hard plaster" had "drawn fire from E. Boyd, Curator of the Spanish Colonial Society." She was quoted as saying that hard plaster was no more permanent than mud plaster, citing a wall at the Palace of the Governors which did not last a year after hard-plastering before collapsing.

Fr. Alvarez, the pastor, was quoted as saying that the church would be left as it was except for the "hard plastering" of the exterior. J.A. Maes, a member of the parish said that the parishioners agreed with Fr. Alvarez. He said, "In the good old days, people were more willing to work together and do the plastering. Today, it is hard to get people to do it. We don't want to be selfish, but we do have a problem." He said that with the hard plaster the chore of mud plastering every year or two would be eliminated, but the total effect of the church would remain the same.

The next day Genevieve Janssen, Chair of the "Friends of Taos Valley," wrote a letter to Archbishop Davis requesting a meeting to discuss the problem. The Archbishop asked the architect to reply to her letter.

On the sixth, Mrs. Sammy Heaston wrote the Archbishop concerning the establishment of a "Perpetual Maintenance Fund" for the church in the amount of \$55,000 to \$65,000 from which the accrued interest would be used "in perpetuity for the maintenance of this important historical landmark." She enclosed a list of pledges totalling \$6,856.

In reply to an inquiry from Ms. Janssen, John Gaw Meem, Architect, in a letter dated February 8, told her about a chemical weather-proofing material he had used on his adobe stables with success. He estimated the cost at fifty cents a square foot and expressed the hope that the material, which would not discolor the adobe and might last the life of the building, could be used.

George Wright replied to Ms. Janssen's letter to the Archbishop saying that any soft plastering that might be done would be contingent on making it as weatherproof as possible.

On February 13, Gus Fernandez, President of the Parish Council, wrote Archbishop Davis reaffirming the council's decision made at a meeting on the tenth, to proceed with the stucco work based on the architect's report in which he "...advises that a coat of hard plaster over a

well-secured mesh of wire would in effect lend the necessary protection and reinforcement that would be found wanting should soft mud plaster be used." (The report didn't state this exactly, but did say that a carefully applied stucco coating could be applied at no great loss to the overall form and appearance.) The letter says further that the council is determined to proceed with the application of the hard plaster without regard to the protests from community.

Nathaniel Owings pledged \$1,000 to soft plaster the church using Pencapsula, a chemical stabilizer developed by a Texas firm and used by the National Park Service on some of their monuments. This is the same product used by John Meem on his stables.

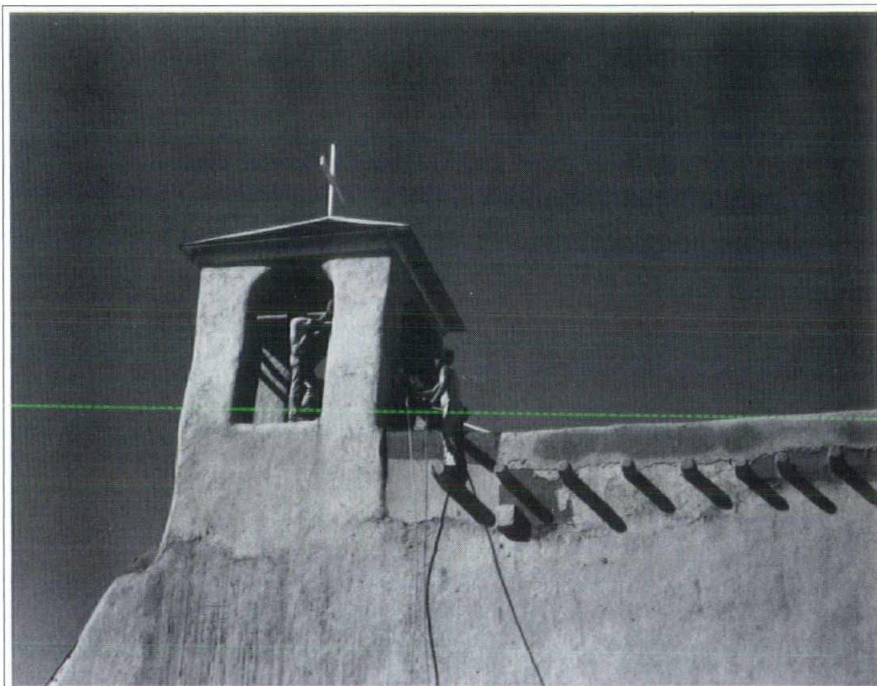


Photo by Helen Greene Blumenschein

In the meantime, work on the interior was proceeding. The new heating system was being installed, the electrical wiring had been redone and the walls plastered. A very attractive wood moulding was uncovered on the right side of the nave when the old plaster was removed. It was left exposed when the new plaster was applied. Another interesting find was that of skeletal remains of some infants who had been buried in the walls of the north bell tower. The remains were reinterred in the churchyard.

John Meem met with Archbishop Davis in early March; and the Archbishop agreed that, if a Society for the Preservation of New Mexico Mission Churches (similar to the organization of the 1920s) were established, he would consider using mud plaster with Pencapsula, provided the project architect and the contractor agreed. On March 13th, Meem wrote to George Wright with some corrected specifications for Pencapsula and offered \$1,000 to help meet the cost because he felt it might set a precedent for survival of adobe construction.

Later in March, the decision was made by the



Photo by Wolfgang Pogzeba

Archbishop to proceed with the hard plaster despite the request of the architects to give the waterproofing material a try. Meem, who was visiting in California sent a telegram to the Archbishop requesting that a final decision be delayed until his return. However, according to Msgr. Reinberg, the wire arrived too late. The decision to go with the hard plaster was made primarily because the use of Pencapsula was still experimental and might not solve the problem.

Other repairs were made to the church, such as the construction of new front doors to match as closely as possible the existing ones, installation of a new lighting system, and building of a new choir loft floor and stair. The stucco was applied, and a story in the *EL PASO TIMES* summed up the feeling of many: "The essential lines of the architecture have been preserved and the church has been saved from total decay. But to the adobe aficionado, it will never be the same."

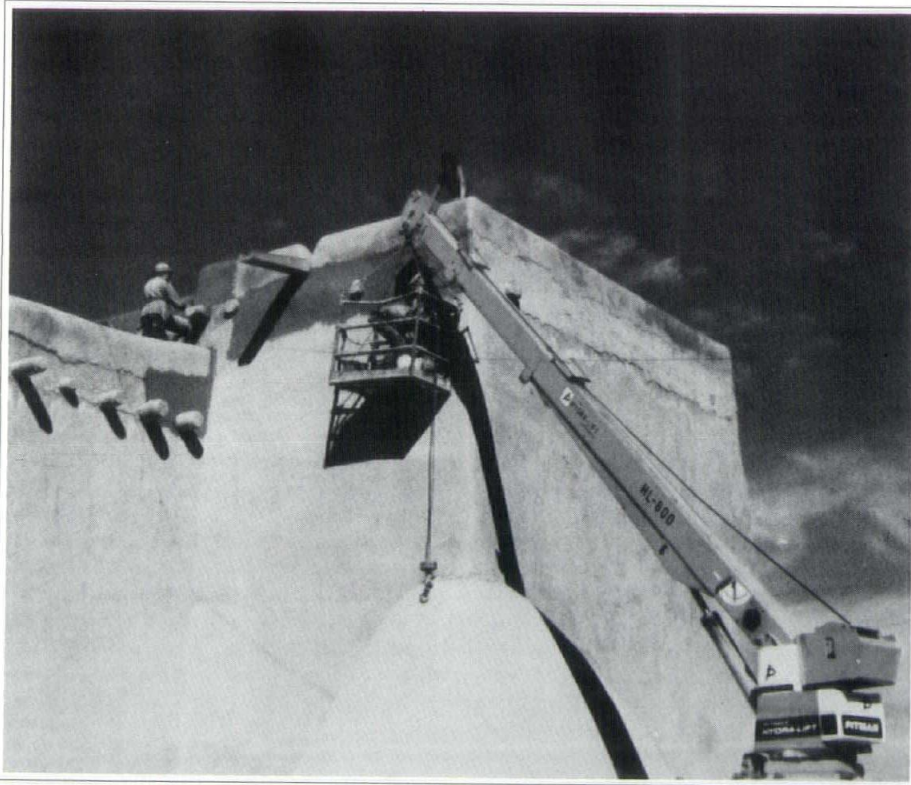


Photo by Helen Greene Blumenschein

Almost before the stucco application was complete, it began to crack. By 1970, the cracks were so bad that a painting contractor was hired to put fiberglass fabric over them and then paint the entire building. The cracks reappeared within a year. There was enough movement in the stucco to buckle the tape as the openings closed and tear it when they opened. The continued patching and painting resulted in a very unsightly surface, since the taped joints showed clearly, and the paint did not match the stucco.

Father Michael O'Brien, who was ordained in Taos in 1970 and said his first mass in St. Francis on June 28th of that year, always had a fondness in his heart for the old church. When he was assigned to Ranchos de Taos in 1977, he was interested in the church, and with the help of the people, restored it to its previous beauty. Confronted by the deterioration brought on by the application of the stucco and subsequent patching, he first had the constitution of the Parish Council rewritten. This returned the church to the traditional way of governance, with Mayordomos responsible, during one-year non-renewable terms, for the care of the church. The Mayordomos formed the Parish Council which is composed of six husband-and-wife couples from Ranchos de Taos, and two couples each from Talpa, Llano Quemado and Los Cordovas — 12 couples altogether.

In early 1979, damp spots were observed on some interior walls along with spalling plaster and peeling paint. A council meeting was called to discuss the deterioration of the church; and, following the meeting, the Santa Fe architectural firm of Nestor and Johnson was asked to investigate the problems and make recommendations on how to correct the problems. Beverly Spears, of that firm, made a thorough investigation of the church and presented a report to Fr. O'Brien on March 17, 1979. She found that the cracking of the stucco was due to thermal expansion and contraction and lack of compatability of the cement stucco with the adobe. The subsequent moisture penetration had exacerbated the situation.

Spears offered three alternatives: repair the existing stucco; replace the front facade with mud plaster, assuming that later on the entire building could be replastered in mud; remove all the stucco, repair the adobe walls and replaster the whole church with mud plaster. Assuming that the work would have to be done by a contractor, she estimated the costs to run from \$22,900 for repairing the existing stucco to \$41,000 for mud plastering the church.

In the summer of 1979, the Council authorized the installation of a new roof and at the same time made an examination of the interior walls. At some places where moisture had been observed, they found wet mud behind the surface; and at the north buttress, a steel rod was driven into it without meeting any resistance. After these conditions were observed, architects Nestor and Spears made another investigation and decided that patching the stucco would be a very poor solution and urged the Parish Council to remove the stucco and to put mud plaster on the church as soon as possible.

Leo J.V. Gonzales, Mayordomo from Talpa, Vice President of the Parish

Council, wrote to Archbishop Robert Sanchez apprising him of the condition of the church and asking assistance.

In order to get the work started, Mario Barela, a Mayordomo of Ranchos de Taos, told Father O'Brien to go down the parish list and call the people to come to work on a certain day, or provide food for the workers. The 600 families in the parish were divided into groups of 25, and each group was assigned days to come and work.

The first weeks were taken up with the making of adobe brick. Mayordomo Eduardo Duran provided space in the yard of his home for the work. The workers made about 40,000 adobes in the traditional way, and stacked them in the sun to dry. As the stacks grew beyond the capacity of Duran's yard, the work was moved to the backyard of the Rectory.

On June 27th, the northeast buttress was opened and found to be saturated. When the other buttresses were opened in August the same situation was found, and there was no question then that the walls should be mud plastered after rebuilding. Water had entered the buttresses through cracks in the stucco, but because of the imperviousness of the material there was no way for the trapped moisture to escape.

Two interesting things were found during the demolition of the buttresses. Inside

them were many bones later identified as common domestic animals, wild elk, and deer. Beneath the buttresses was a layer of ashes which has not been explained.

All of the buttresses were rebuilt as closely as possible to the existing shape. New concrete foundations were constructed to support them. It is estimated that 5,000 adobe bricks were used on the northeast and southeast buttresses and 10,000 were used on the large west buttress at the apse. All of this work was done by Eduardo Duran, four paid helpers and the members of the parish, i.e., the elders, men, women, teenagers, and children.

After the walls and buttresses were rebuilt, the older members of the parish instructed the younger people in the art of mud plastering. In earlier days the plastering had been done by the women of the parish who were called *embarra-deras*. But this time many men were involved in the work. The plaster was applied up to the roof line and stopped there in late October because winter was approaching and there was concern about what to do with the concrete block parapets installed in 1967.

To celebrate, a special Mass was held on October 4, 1979, followed by a gathering in the parish hall with food, drinks, and dancing.

As soon as it was feasible in 1980, the parishioners began reworking the parapets and the rest of the walls. Work was finished by August 15, 1980, in time for the Fiesta of the Assumption of the Blessed Virgin. At the Mass Father O'Brien led the procession around the church, celebrating a job well and safely done.

The parishioners did all the work with no outside help and returned the church to its original appearance. Soon after the work was completed, word was received that the walls of San Juan Nepomuceno Church at El Rito had collapsed because of a drainage problem and would have to be rebuilt. Consequently, the 5,000 unused adobe bricks were given to the El Rito church.

Since 1980, the church of St. Francis of Assisi has been plastered with mud every summer by the parishioners.

Van Dorn Hooker, University Architect at the University of New Mexico, has been involved extensively with and writes frequently about the restoration of adobe churches in New Mexico.

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Rancho San Miguel Architectural Design Competition

Four Albuquerque architects were winners in the statewide architectural competition sponsored by the developers of Rancho San Miguel near Las Vegas, New Mexico. The competition was held Saturday, April 4, at the Albuquerque Convention Center.

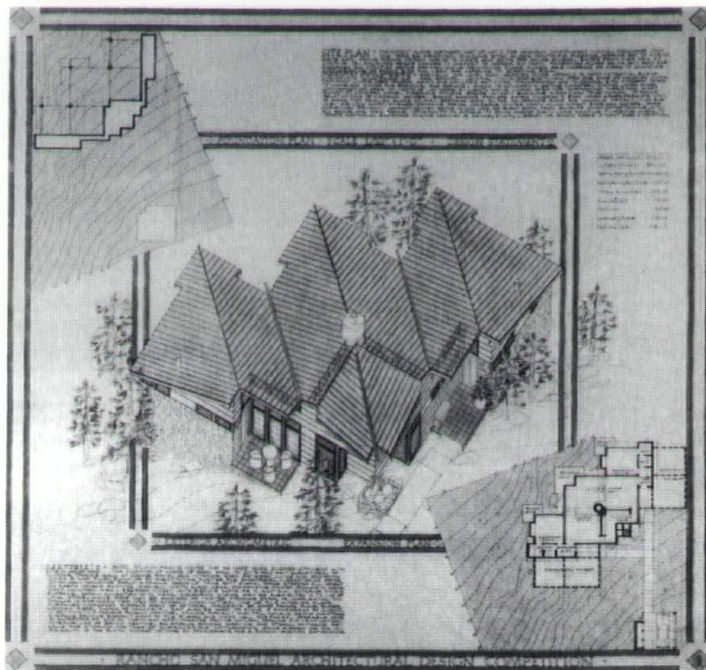
Competition was divided between two designated sites on the property. Winners were: Lot #5, first prize of \$1,000, Robert W. Peters, AIA, Architect. Second prize of \$750 was awarded to Scott Prickett, of Scott Prickett Associates. Winners for Lot #6 were: First prize of \$1,000, Glade Sperry, Jr., AIA, of Westwork Architects; second prize of \$750, Mark Harberts, AIA, of Pugh and Associates.

The competition was open to all resident licensed architects in New Mexico, and drew 21 entries. The competition was juried by: George Anselevicius, FAIA, Dean of the School of Architecture and Planning at the University of New Mexico; Judith Chafee, FAIA, an architect and educator from Tucson, Arizona; James Nagle, FAIA, an architect and educator from Chicago, Illinois; V. B. Price, urban critic and poet, from Albuquerque, New Mexico; and Patricia Blunt Koldyke, the developer's representative from Kennilworth, Illinois.

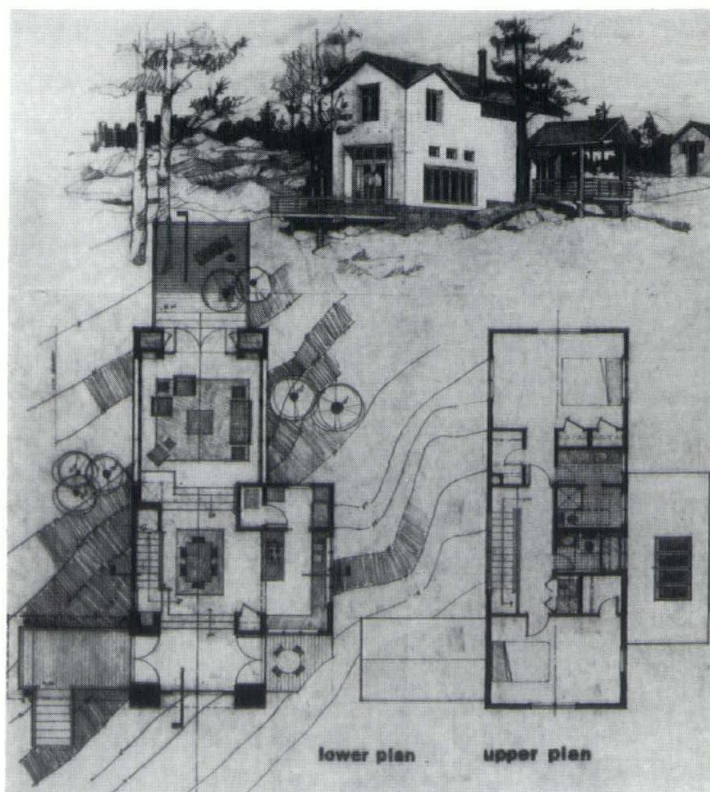
Rancho San Miguel is a 4,300 acre tract eight miles south of Las Vegas. Gallinas River Development Company, of which Martin J. Koldyke of Chicago is founder and general partner, will act as developer. Twenty-three homesites of between two and six acres are available.

"The Gallinas River Development Company is committed to setting a high standard of excellence in architecture for Rancho San Miguel," said Koldyke. "The ranch is located where the mountains meet the plains. This part of the Tecolote Land Grant, awarded by the government of Mexico in 1832, commands some of the most beautiful views in Northern New Mexico. The Las Vegas National Wildlife Refuge, which offers sanctuary for over 170 species of birdlife, lies to the northeast of the ranch. The Sangre de Cristo Mountains and the Gallinas River Canyon also make up a part of the ranch's dramatic landscape, offering a stunning setting for creative architectural design which the competition hopes to inspire."

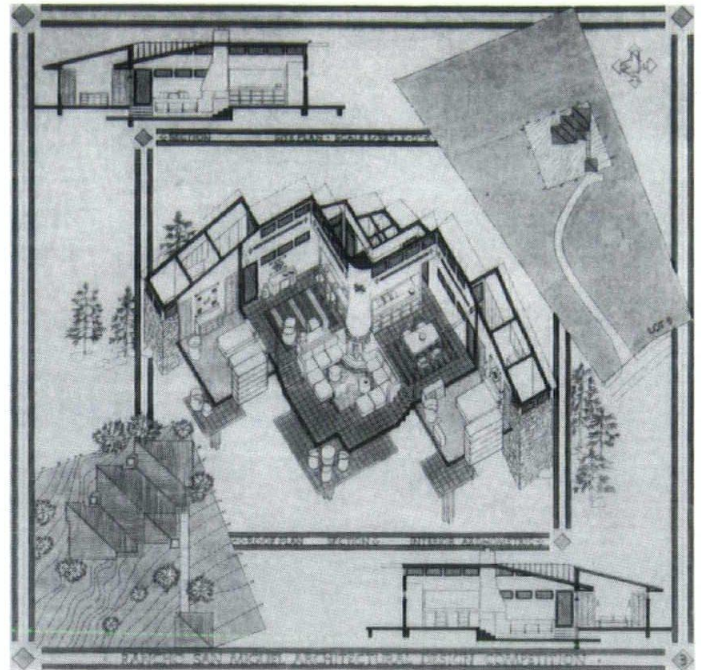
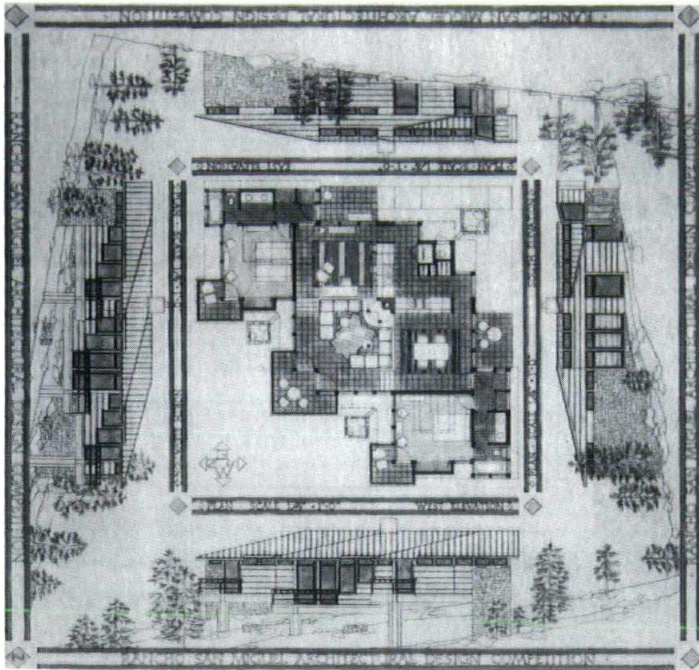
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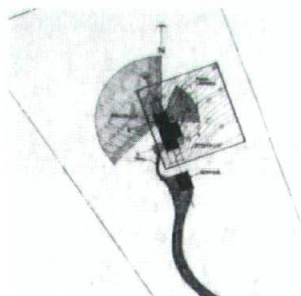
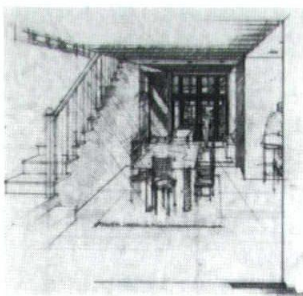
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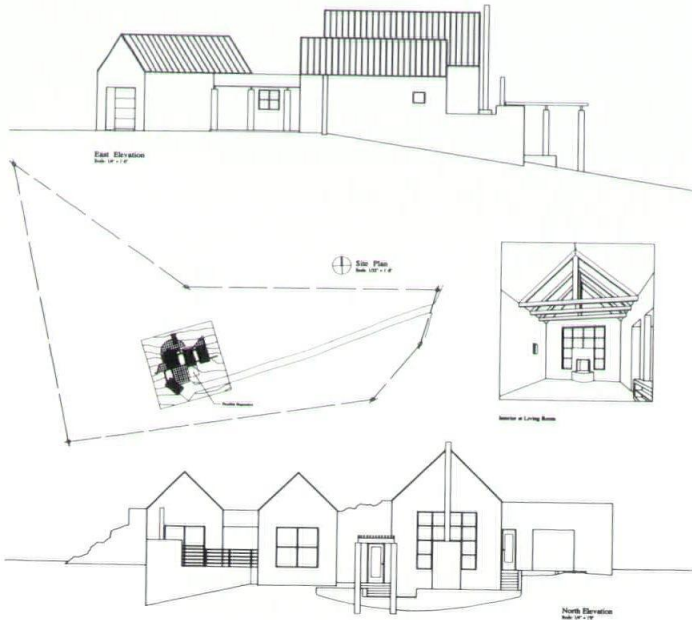
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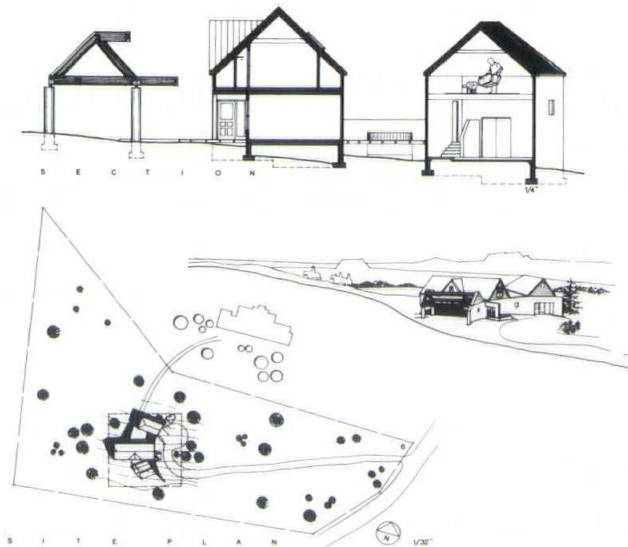
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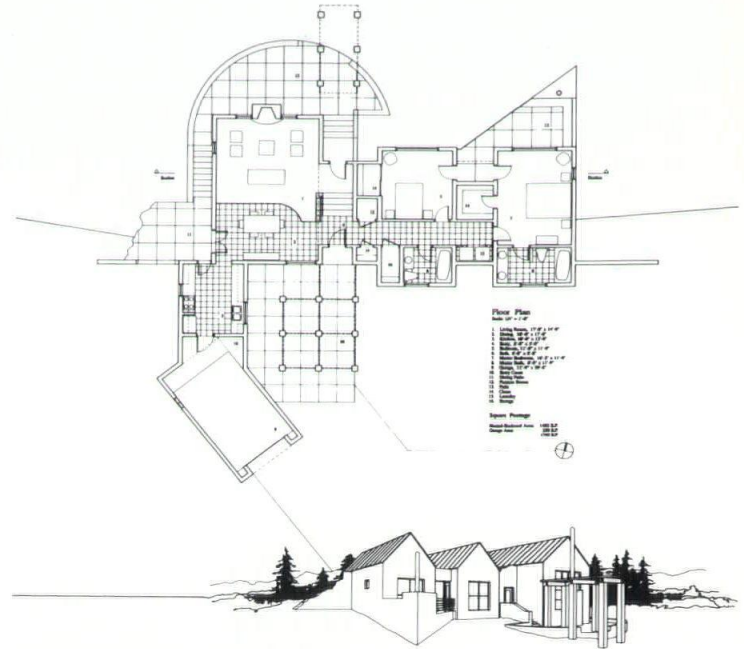
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Glade Sperry, Jr. A.I.A.



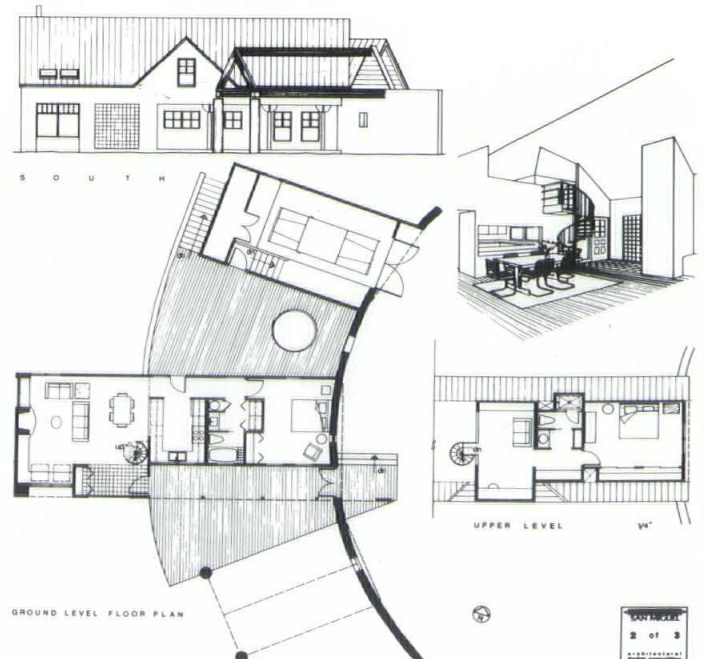
Second Prize Winner: Lot 6
Mark Harberts A.I.A.



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Westwork Architects
2403 San Mateo Blvd., Suite 5-2
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Mark Harberts A.I.A.
Pugh & Associates
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Rancho San Miguel Competition Program

Purpose of Competition

The Gallinas River Development Company, wishes to set a standard of excellence in architecture for Rancho San Miguel. Two of the total of 23 sites have been chosen to build vacation homes which will be offered for sale. The developer is sponsoring the Architectural Design Competition for the two houses with the intention of building the winning designs immediately following the competition. The winning architects should be prepared to furnish working drawings as quickly as possible after the completion of an architectural contract with the developer.

Design Program

The houses should be designed as vacation homes to be occupied intermittently by the owners and their friends. It is anticipated that they will be used mostly during the May thru October period, but they should also be usable during the winter months.

The houses are to be designed in the "spirit of the Southwest", and the client expects a creative interpretation of that statement. The guest lodge nearby (see information enclosed), is a frame-stucco house which includes the natural stone found on the ranch. The above is for information only and should not be construed as constraints for the solutions.

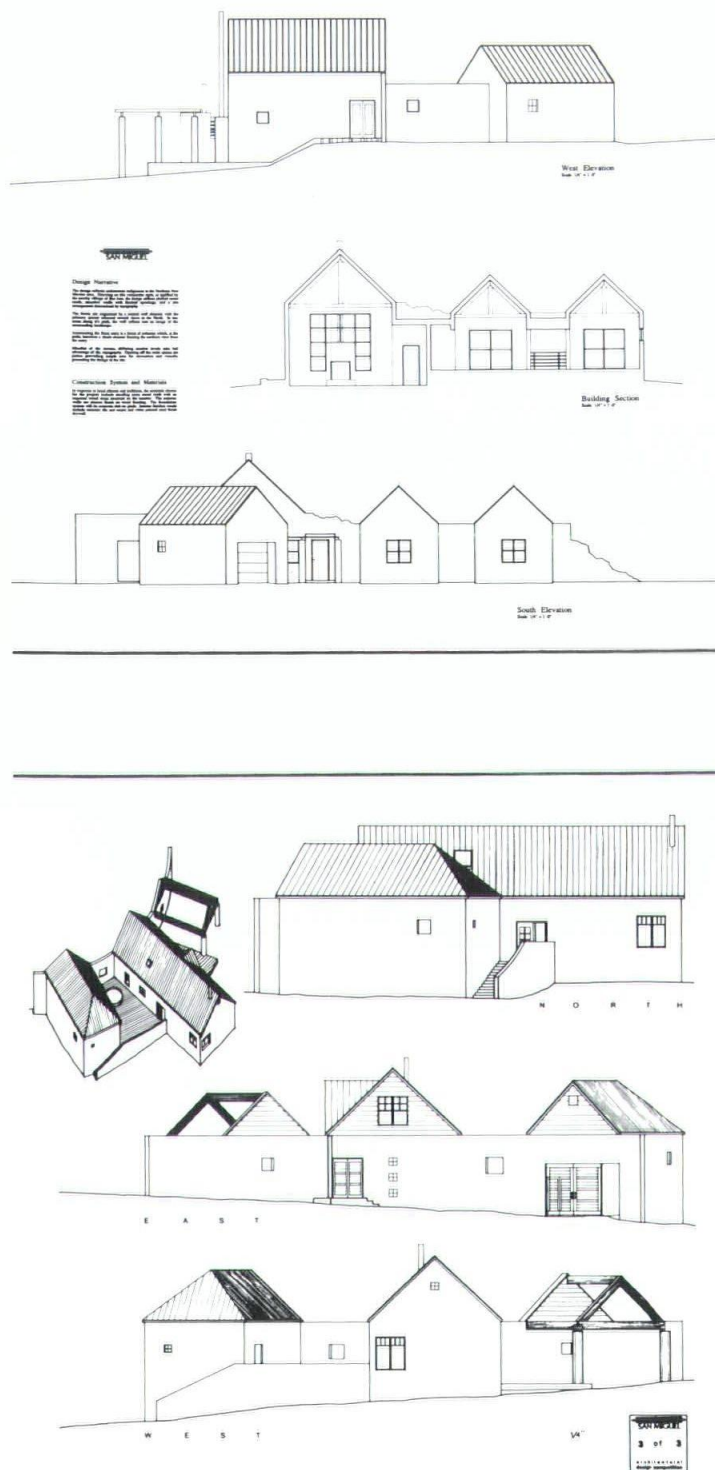
Each house is to be 1500 ft², (enclosed heated space). This is to include exterior walls, but does not include porches, decks, balconies, garages or carports. Each house must include two bedrooms and two bathrooms. The designs should indicate possibilities for addition and growth. The houses are to be built at a cost of not more than \$60 per ft² for the enclosed heated space.

The Declarations and Covenants require that all structures built on the lots be attached to one another, such as house, guest house, garage, storage, etc. Exceptions can be made when the topography necessitates. For the purpose of the competition, Lot #6 will be able to conform to the requirements. Lot #5 will be excepted from the requirement of an attached garage or carport. Each design should include a garage or carport for one car with some general storage space.

The utilities to the lot line include electric, telephone, and water, all underground. Natural gas is not available and it will be necessary to have a septic tank.

The client wishes for solutions which would do the least "damage" to the existing natural environment. Restrictions regarding the cutting of trees is addressed in the Declarations and Covenants.

All entries were judged on Saturday, April 4th, and the winners announced that afternoon at a public reception from 5:00 to 7:00 p.m. at the Albuquerque Convention Center. All persons interested in architectural design were invited to attend this reception. Each entry submitted was on display for viewing at that time.



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As a 501(c)(3) charitable and educational organization, the Foundation will be eligible for grants from both public and private sources. Along with fund-raising proceeds, grant funds will help to develop *programs in the schools* and other *public programs*. The Foundation will provide *administrative assistance* to other groups for activities that support architecture in New Mexico.

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New Mexico architecture is a unique part of our cultural heritage and has a distinct regional beauty. It represents a complex history of centuries of growth and change. The Foundation offers you a chance to make a lasting contribution to New Mexico architecture.

Join the New Mexico Architectural Foundation, ask your friends and associates to join. Never before has New Mexico been more aware of its architectural history and itself as a growing area. The Foundation can help capture that enthusiasm and help promote the best in architecture.

Van Dorn Hooker, FAIA
President, New Mexico Architectural Foundation
June 1987

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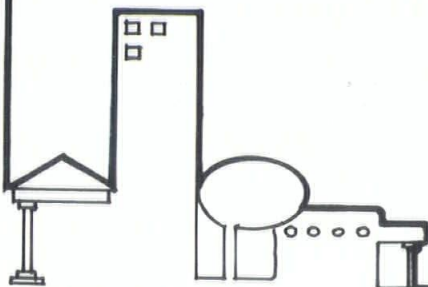
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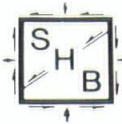
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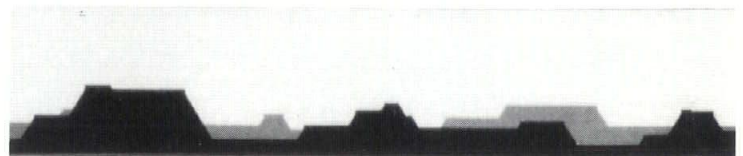
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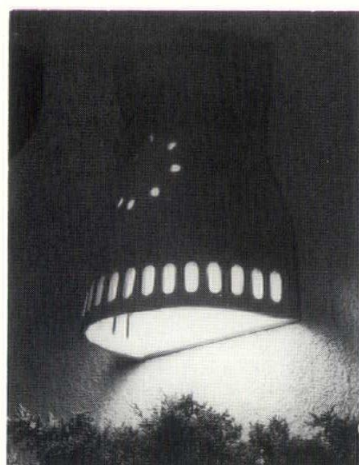
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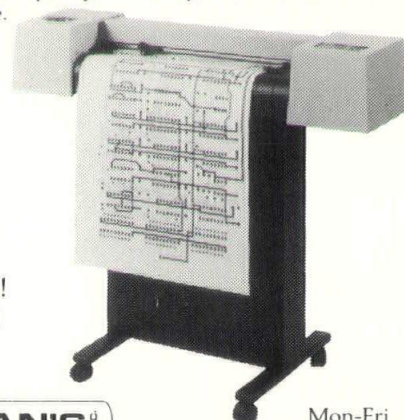
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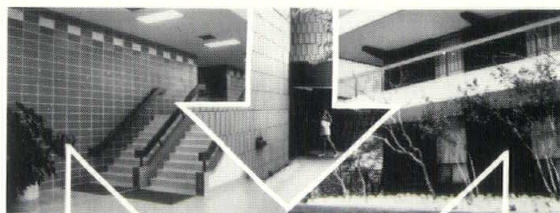


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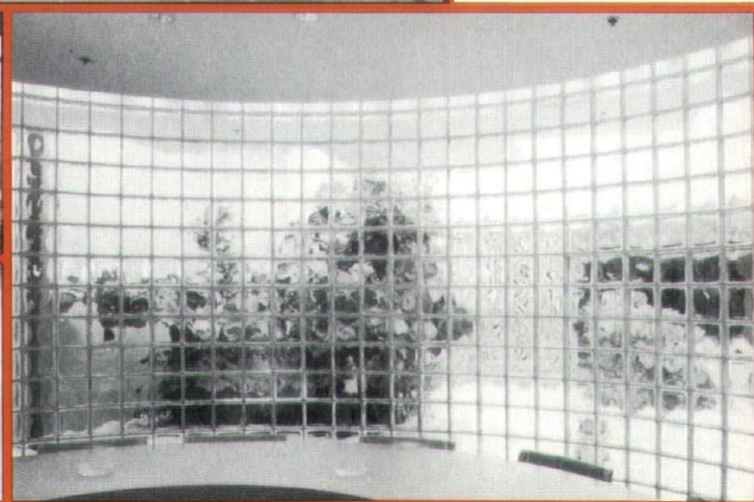
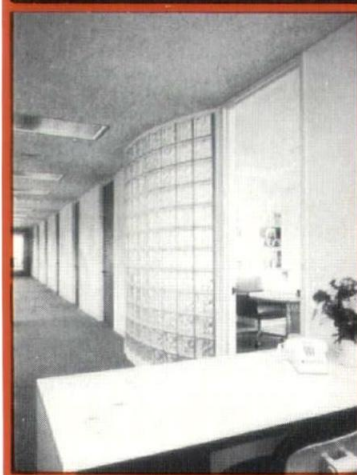
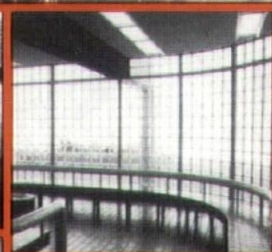
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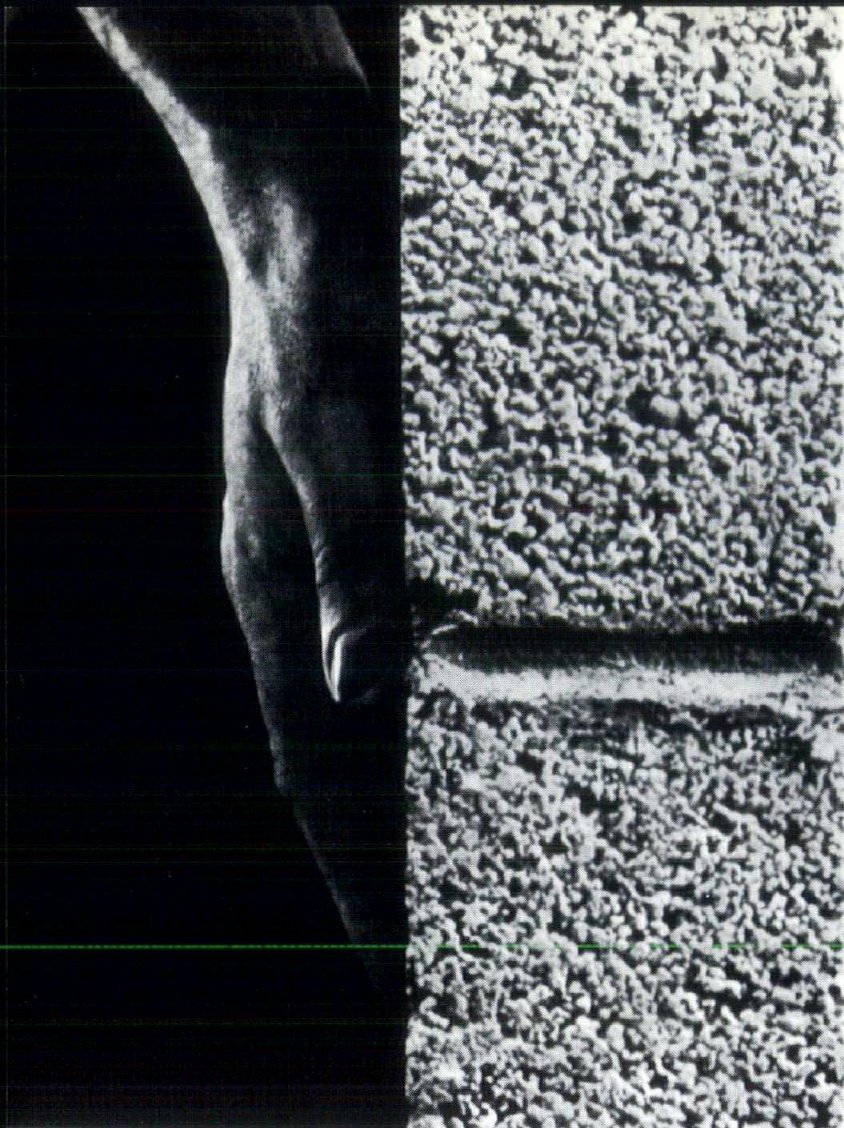
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• vol. 28 no. 4 •

july-august 1987 • new mexico architecture

In this issue,

The author, T. Lindsay Baker, of the article on New Mexico Windmills (pages 11-15) is shown, above, 'rawhiding' the wheel of the 10-foot "Corcoran" windmill that was restored on the campus of New Mexico State University in Las Cruces.

□ □ □ □

I report with joy that a grand and proper New Mexico party/celebration was held last May 24th at the Museum of International Folk Art. The gala affair was held to honor a citizen of Santa Fe. The 80th birthday of Alexander Girard, AIA, architect, designer and folk art collector, was the reason for the occasion. The party was made festive by entertainment, decorations and a 6' x 8' cake adorned by folk art figures grouped about a Mexican church made of pulled sugar and sugar dough. A fitting day for an honored architect.

□ □ □ □

A credit was missing from the Award winning Valencia Campus, UNM Landscape Architecture project reported in the 1986 Honor Awards issue (*New Mexico Architecture* March/April, 1987). While the Landscape Architects were listed correctly as Royston, Hanamoto, Alley & Abey, the Architects for the campus were not listed. *Barker Bol Associates and Jon Friedman Associates, a joint venture, were the Architects* for the Valencia Campus. We apologize for the oversight.

□ □ □ □

The cover of this issue of *NMA* was made possible through the generosity of the Owenwest Corporation. The architect for the La Luz de Sol building was Barker Bol Associates; the General Contractor was Johnnie McDonald.

JPC

nma

 The Editor's Column 3

NMA NEWS 9

Albuquerque Project Wins Award
Ranching, Cattle Guards and Windmills — Four Books
Reviewed by Carleen Lazzell
John McHugh Suffers Stroke

New Mexico Windmill Towers as Vernacular Architecture 11
T. Lindsay Baker

Arizona Red, Flagstaff's Sandstone Industry 16
by Pat H. Stein

Professional Directory 20

Advertiser's Index 22

(Cover — *La Luz del Sol*, North Coors, Albuquerque — © Robert Reck, Photographer)

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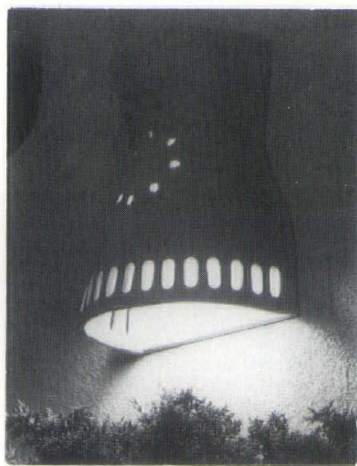
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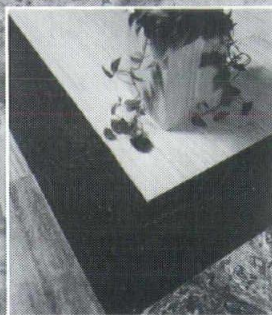
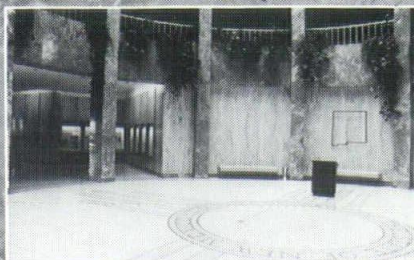
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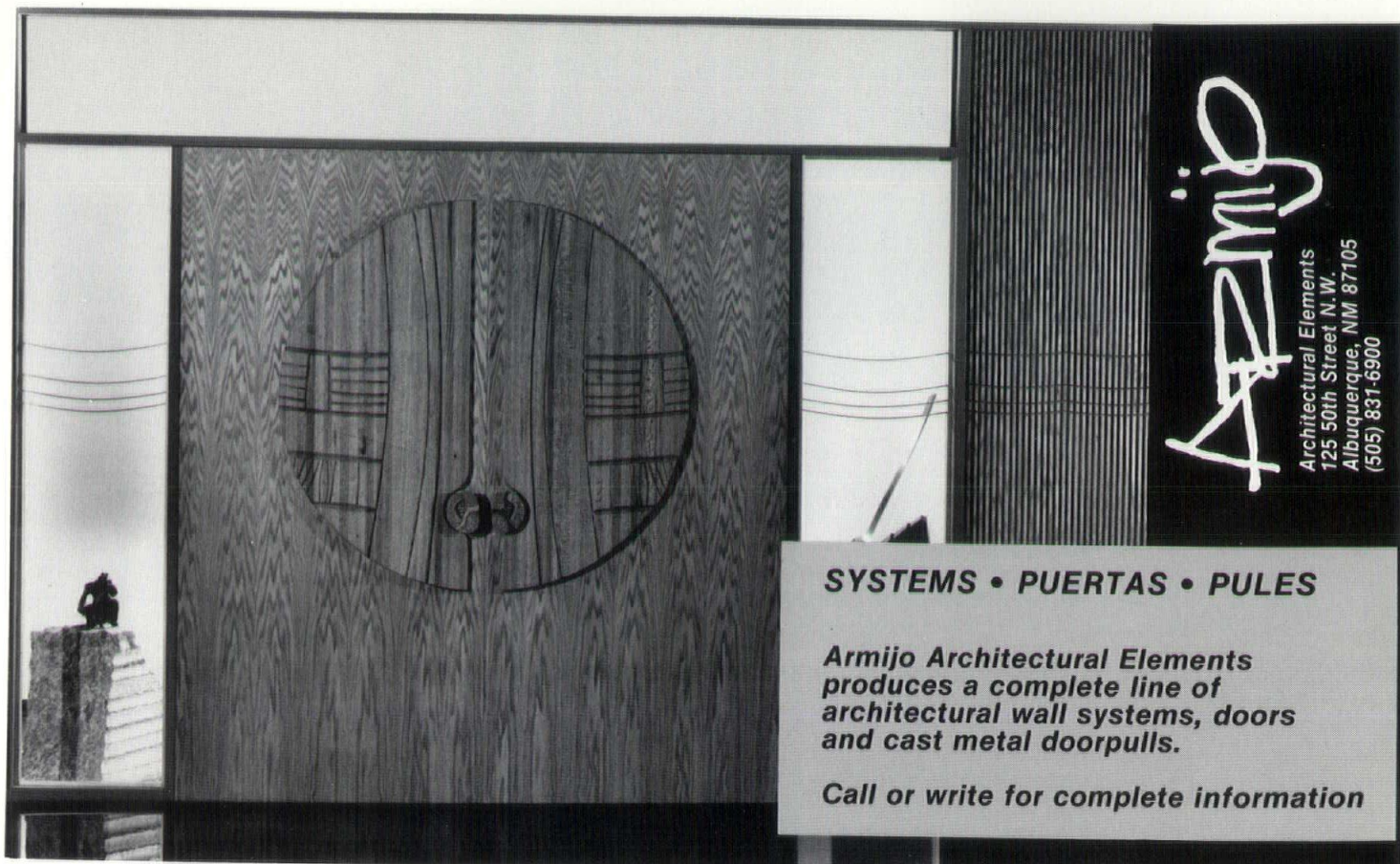


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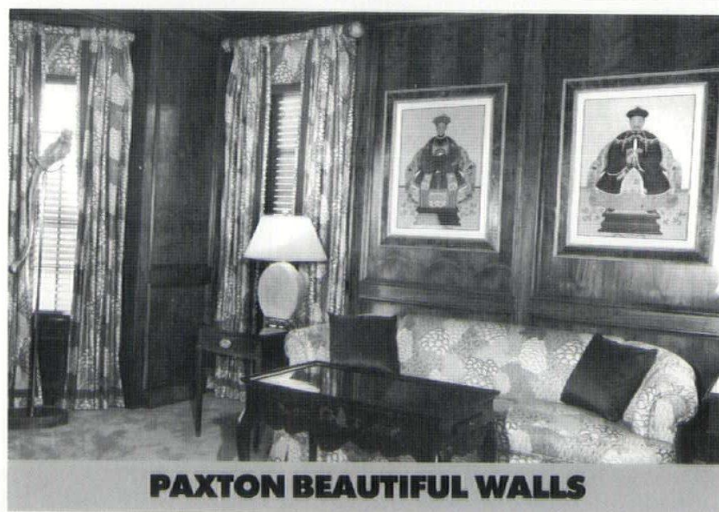


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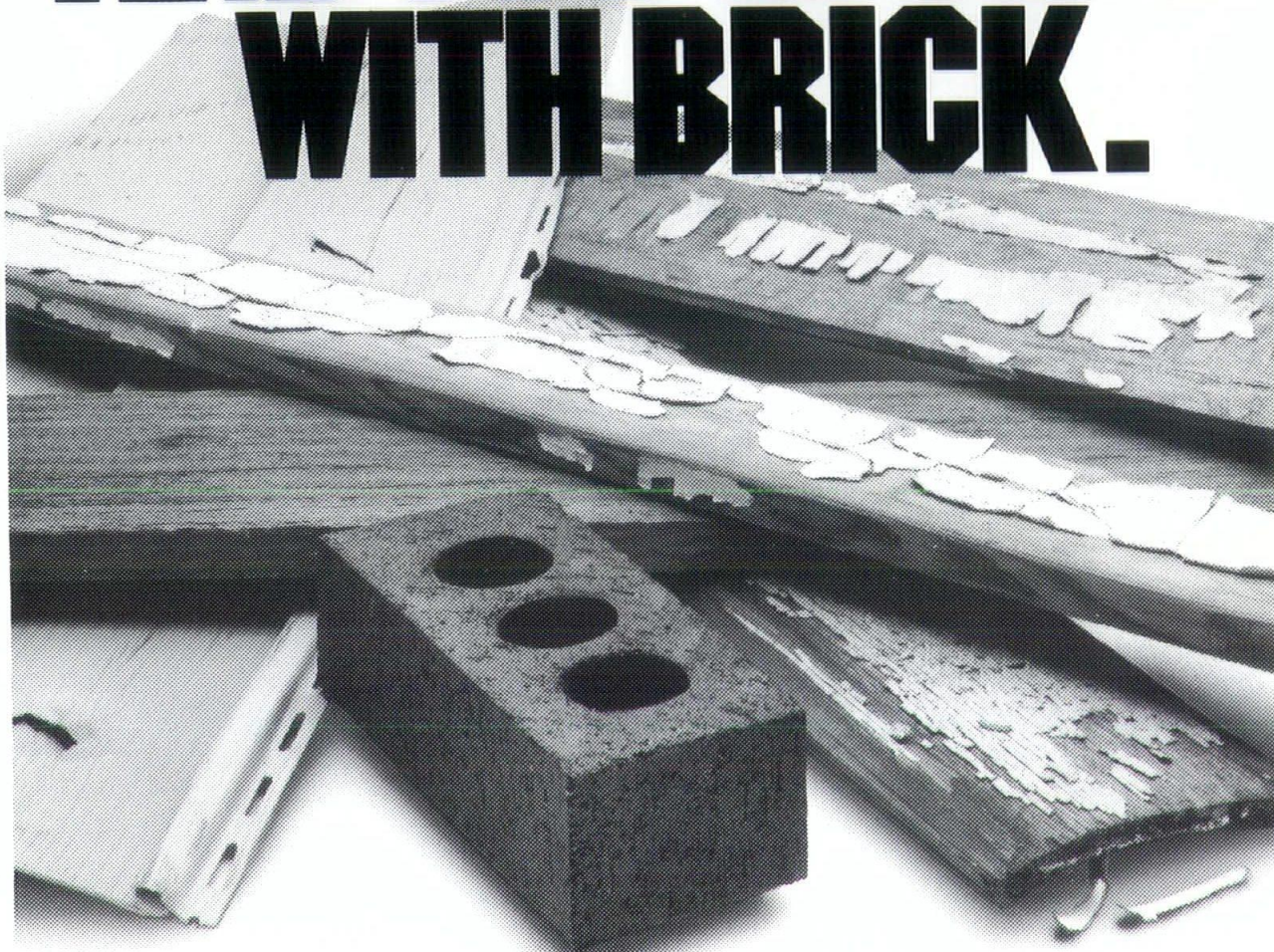
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The award-winning shopping center is located at 5200 Eubank NE in Albuquerque, New Mexico. This unique facility is owned by Spain, Ltd. and was designed by the architectural firm of Vogt and Byrnes, P.A. The Jaynes team leaders who made it all come together were Rick Marquardt, Estimator; Tom Kregge, Project Manager and Doug Summers, Superintendent.

The focal point of this center is a large, colorful canvas-covered breezeway which, in addition to hosting a number of restaurants, provides an extremely pleasant outdoor eating environment. Located just west of the breezeway is another eating area which is centered around a

fountain and contains several umbrella-covered tables. This entire area is bordered by flowers and encircled by several grassy, well-groomed planters.

The structure itself is faced with a dark red brick veneer and is capped by a parapet comprised of several bands of similarly colored stucco. Emerald green awnings were installed along the parking lot side of the portico, and run the entire length of the structure. These not only serve to identify the tenants, but also provide an interesting contrast to the deep reds of the brick and stucco facade.

It's clear that the architects who designed the Promenade Shopping Center paid a great deal of attention to detail. They have combined several different building materials and unique architectural features to produce a design which is both functional and attractive. Because of this project's unique qualities, Jaynes also had to pay especially close attention to detail, and they did!

RANCHING, CATTLE GUARDS AND WINDMILLS

Four Books reviewed
by Carleen Lazzell

A Field Guide to American Windmills. By T. LINDSAY BAKER. (Norman: University of Oklahoma Press, 1985. ix + 516 pp. Illustrations, notes, appendices, bibliography, index. Cloth \$65.00.)

T. Lindsay Baker, author of "New Mexico Windmill Towers as Vernacular Architecture" (pages, 11-15) has compiled an encyclopaedic work on American water-pumping windmills. Divided into two parts, *The History of American Windmills* and *Windmill Identification*, Baker's book is impressive in both the information presented and in its size.

For those interested in windmills, the bibliography, comprised of several hundred entries, will be extremely valuable, as Baker gathered documentation over a fifteen year period.

Not only does Baker give an indepth view of the first American windmills, he also discusses the evolution of the design of wooden wheel windmills, all-metal windmills and self-oiling windmills.

The Cattle Guard: Its History and Lore. By JAMES F. HOY. (Lawrence: University Press of Kansas, 1982. vii + 233 pps. Illustrations, notes, bibliography, index. Cloth \$19.95.)

Jim Hoy spent his youth on a stock ranch in Kansas then went on to work as a rodeo hand and cowhand, thus giving him a first hand knowledge of the cattle guard.

His extensive research covers seventeen states and five countries with numerous photographs and contributions from hundreds of people. Used in this interesting book of eleven chapters were 75 photographs with three from New Mexico; including the oldest known photograph of a cattle guard. Contributions from 637 individuals were used, of which 15 are well known New Mexicans.

This book has a unique and humorous way of bringing to life an everyday item we all take for granted, "the cattle guard."

Historic Ranches of Wyoming. By JUDITH HANCOCK SANDOVAL. (Casper, Wyoming: Nicolaysen Art Museum and Mountain States Lithographing Company; Distributed by University of Nebraska Press, Lincoln, Nebraska, 1986. With essays by T.A. Larson and Robert Roripaugh. 97 pp. Cloth \$25.00; Paper \$15.95.)

Judith Hancock Sandoval has assembled a very interesting collection of Wyoming ranch photographs along with the intriguing short essays on each which give an insight to establishing a ranch on the frontier.

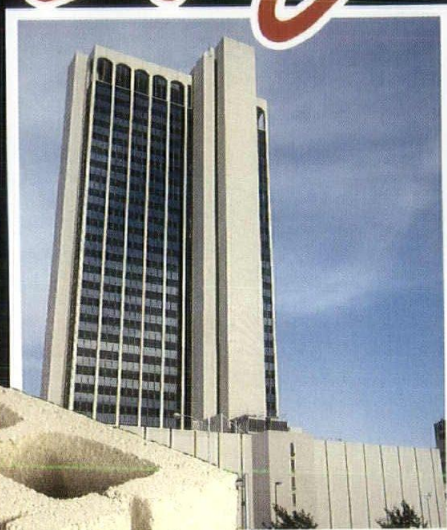
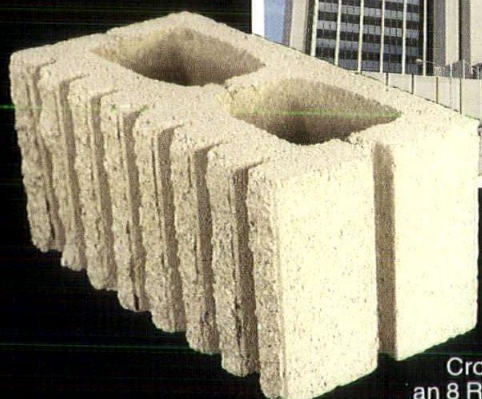
The essay, "Ranching in Wyoming" by T. A. Larson, brought this reader back into the late 1800s with Mr. John Hunton and his effort to make something out of his life in Wyoming. It is unfortunate that Mr. Larson did not have room to print the full 50 year diary of Mr. Hunton.

Robert Roripaugh's essay on his family's ranch as it was thirty years ago with its ups and downs and a time and life style now almost gone is well worth the readers' time.

Old Ranches of the Texas Plains. Paintings by MONDEL ROGERS; Foreword by Mitchell A. Wilder. (College Station: Texas A & M Press, 1976. 124 pp. Cloth \$35.00.)

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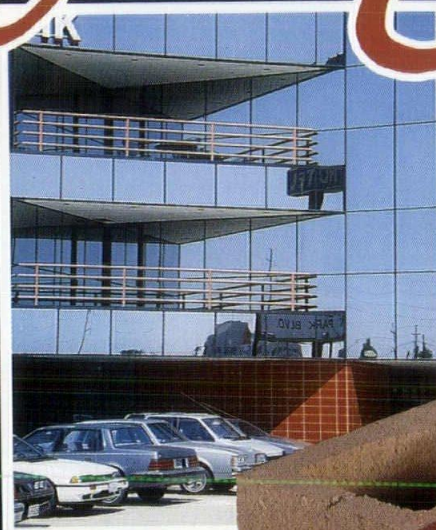
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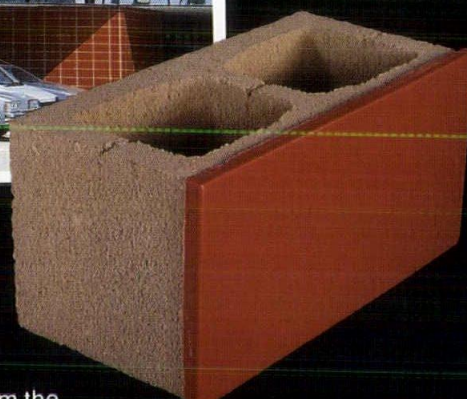
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NEW MEXICO WINDMILL TOWERS

AS VERNACULAR ARCHITECTURE

T. Lindsay Baker

Anyone who has traveled the plains of New Mexico realizes that windmill towers often represent almost the only vertical elements of an otherwise horizontal environment. But, what about these towers? Do they constitute part of the architectural heritage of New Mexico? The answer, at least from this author, is an emphatic yes.

Windmills began appearing in New Mexico in substantial numbers in the decade of the 1880's, although a few probably were used earlier. The entry of transcontinental railroads to the territory in that decade opened the region to large volumes of manufactured goods which before had been available only in limited amounts. Before the coming of the railways, the cost of wagon freight in New Mexico had precluded the shipment to the region of all but the most necessary or expensive goods.

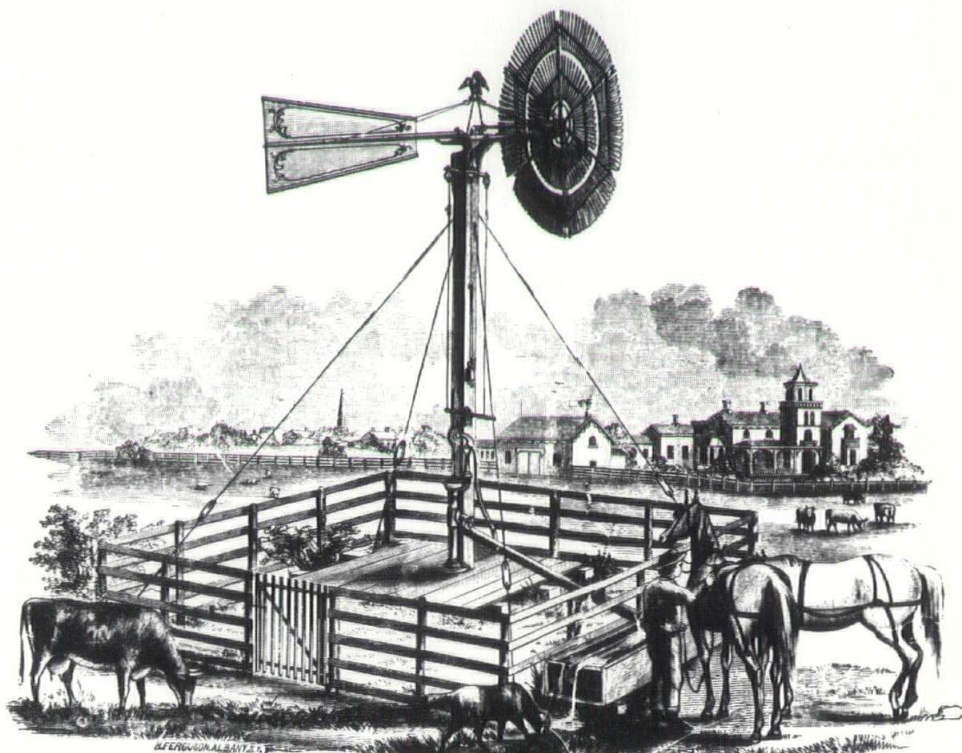
In order to survive in wind-swept New Mexico, windmills had to be self-governing. This means they automatically turn to face changing wind directions and control the speed of their wheels automatically in order to prevent destruction by centrifugal force.

Self-governing windmills had their origin in New England. A Vermont-born Yankee mechanic, Daniel Halladay, invented and patented the first commercially successful self-governing American windmill in 1854. In that year he began manufacturing the machine and soon was followed by others.

With the availability of railway transportation, distributors began shipping large numbers of windmills to New Mexico a century ago. The mills were used not only on farms and ranches, but also to provide domestic water to urban dwellers.

A typical early New Mexico windmill user was Isaac R. Birt of Lordsburg. On September 12, 1886, he wrote to the Springfield Machine Company in Springfield, Ohio, the maker of his new mill:

We attached "Leffel" Wind Engine to-day to a two inch pump set at the bottom of a well 200 feet deep, and it hoisted the water with ease in a very light wind. I do not hesitate to say, it is the best mill ever invented. Your Catalogue says it is a self-regulator, but I see no way it would blow out of gear unless it blows off the tower. How do you make it a self-regulator?



Farm Wind Mill,--Its Erection and Application Illustrated. Manufactured by Empire Wind Mill Manufacturing Co., Syracuse, N. Y.

Engraved view of one of the early windmill towers consisting only of an upright timber with guy wires. From Empire Wind Mill Mfg. Co., Syracuse, N. Y., Descriptive Catalogue... (Syracuse: Daily Journal Presses, [1870]), in Library of Congress.

The next day, after the winds grew stronger, Birt wrote the maker the following note:

In my letter of yesterday I requested instructions how to make the "Leffel" Engine a self-regulator. To-day a gale of about 40 miles per hour demonstrated to us that the "Leffel" is an excellent self-regulator. We need no instructions in that direction.

In order for a windmill to be effective, it must be erected on some type of tower. The earliest towers were little more than vertical wooden uprights supported by guy wires and occasionally by diagonal wooden girts. Such designs obviously had inherent weaknesses, and none of them are known to have survived.

The next towers to appear were more like those we know today. They were composed of four wooden legs stabilized with horizontal and diagonal wooden girts and

supported firmly on anchor posts. In arid areas such timber towers may be found even today in large numbers.

After the arrival of the railroads, wooden towers could be built comparatively cheaply. Windmill erectors on the southern Great Plains built such towers at the turn of the century for a dollar a foot when the materials were provided. Even as recently as the 1930's they were com-

T. Lindsay Baker is the Curator of Agriculture and Technology at the Panhandle-Plains Historical Museum in Canyon, Texas. He is the author of a dozen books on the history of the American West, among them A Field Guide to American Windmills (Norman: University of Oklahoma Press, 1985), and publishes the quarterly Windmillers' Gazette magazine.

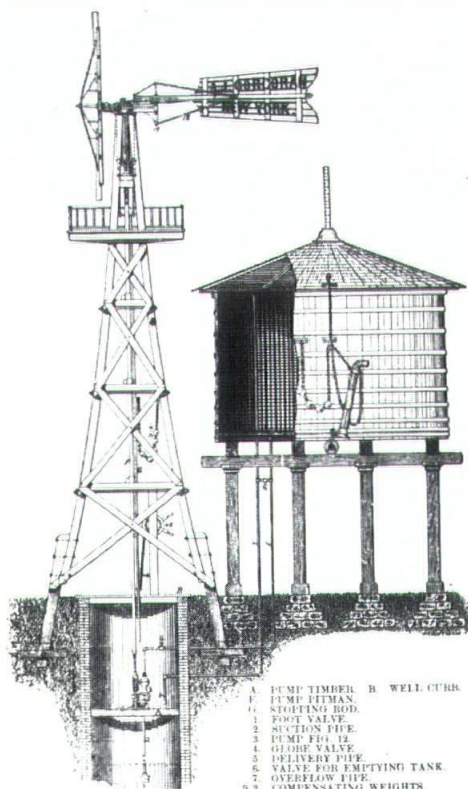
paratively inexpensive, with a twenty-four-foot tower costing about thirty dollars to build. With present-day prices for lumber, however, the traditional wooden towers now cost about the same as factory-made prefabricated steel towers.

Wooden towers were assembled laying on their sides on the ground. After they were built, teams of draft animals or trucks with cables raised them to their vertical position. Often the erectors raised the towers with the windmills, or at least their heaviest parts, in place atop the towers.

Wooden derricks served their purpose well in the semiarid Southwest, but the more humid climate in the East caused the towers in that part of the country to deteriorate comparatively quickly. Eliminating this difficulty and at the same time creating a new market for the manufacturers came new steel towers in the 1890's. Soon these towers were galvanized, making them virtually maintenance-free.

Some of the initial metal derricks, unlike those which we know today, consisted of wrought iron skeletons reinforced by steel cables under tension. Known as "cable towers," they were unsuccessful attempts

A manufacturer's diagram of a recommended wooden tower to support its windmill. From Andrew J. Corcoran, *Complete Catalogue...* (New York: Voegelé & Boeger, Printers, 1878), p. 33, in F. Hal Higgins Agricultural History Collection, University of California at Davis, Davis, California.

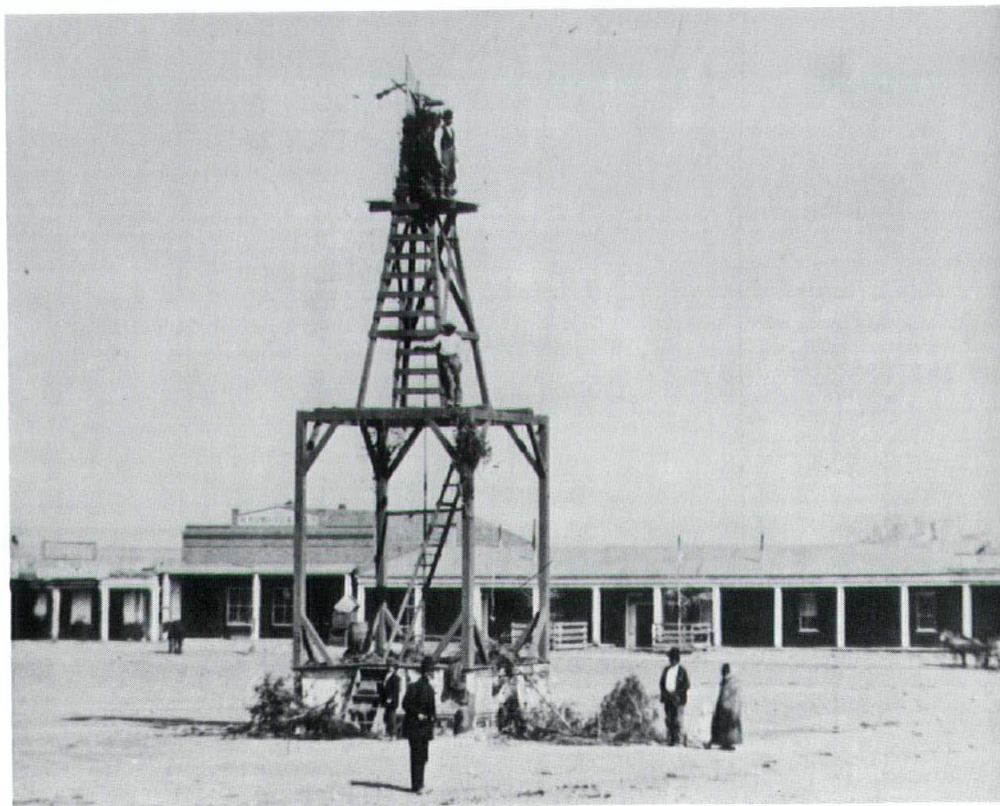


SHOWING A 20 FEET DIAMETER MILL ON A TRUSS FRAME TOWER.



Two "Railroad Eclipse" windmills on telescoped wooden towers at Twin Wells in eastern New Mexico early in this century. Courtesy Garnet Brooks, Shamrock, Texas.

The windmill tower gallows which once stood on the plaza of Old Town in Las Vegas, New Mexico. Courtesy Carl Coke Rister Papers, Southwest Collection, Texas Tech University, Lubbock, Texas.



at finding an economical means for designing and building towers.

Most of the steel windmill towers of the late nineteenth century were very similar to those which we see and use today. They were (and are) made from either three or four angle-steel legs to which were added a variety of braces. The bracing usually consisted of angle steel horizontal members and diagonal braces made from steel rods, steel straps, heavy galvanized wire, or combinations thereof.

Steel windmill towers are designed either to be built up from the ground one piece at a time or to be assembled laying on the ground (as the wooden towers) and then raised after assembly. Makers of each style claimed the superiority of its designs, but there was little difference in terms of durability after they were erected.

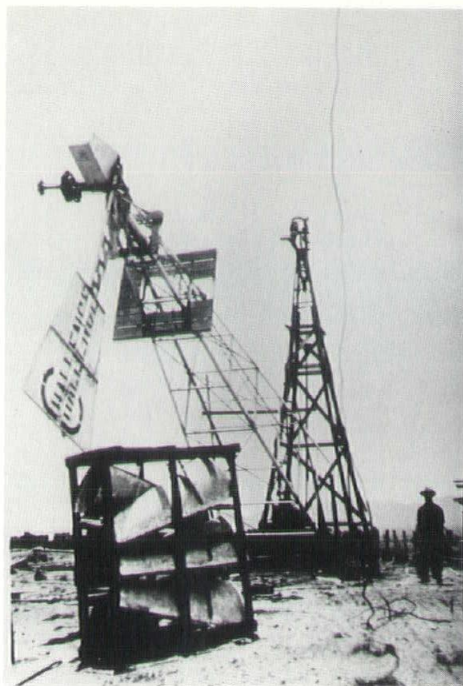
Although in theory the towers with three legs, which employ the strength of triangles, should be stronger, most ranchers in the West preferred those with four legs, ignoring engineering principles.

If a windmill tower is built up from the ground one piece at a time, the erector must find some means for raising the windmill itself to the top of the tower. Until recent times this meant the use of a gin pole placed near the apex to raise the heavy parts to the top of the tower for assembly. Since World War II most windmill men have used hydraulic telescoping booms for this phase of erection.

Geography dictates much concerning tower design and size. On the level plains, where there are no obstructions, in theory a tower needs only to be about twenty feet tall. Since the pipe used in the wells ordinarily comes in twenty-foot lengths and because during pump repairs this pipe must be withdrawn from the well, most windmill erectors build their towers somewhat taller to facilitate removing the twenty-foot lengths of pipe during well service. Consequently the average height is about thirty feet.

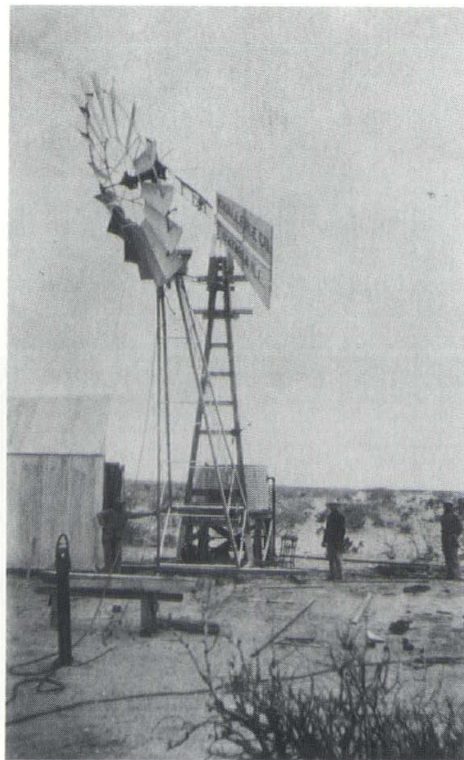
If a well is located in a low place, such as a stream valley where the water table is more shallow, it is necessary for the windmill tower to extend fifteen to twenty feet above the general ground level. Otherwise the mill will not receive enough wind to operate efficiently.

When a windmill is erected at a farm or ranch headquarters, it is important that the tower stand at least fifteen to twenty feet above any surrounding trees or buildings. This obviously is important so that the mill will receive enough wind to function, but the added height is equally important to protect the mill from dangerous ground turbulence around the obstructions during high winds.



Raising a steel tower with large "Challenge 27" windmill in southern New Mexico half a century ago. Courtesy B. H. Burdick, Sr., and Panhandle-Plains Historical Museum, Canyon, Texas.

A crew from the Burdick & Burdick Co. of El Paso, Texas, raising a steel tower and "Challenge 27" windmill near Las Cruces in the 1930's. Courtesy B. H. Burdick, Sr., and Panhandle-Plains Historical Museum, Canyon, Texas.



Today often one sees windmills surrounded by clumps of trees. When the wells were drilled and the towers erected, the trees most often did not exist. Over the years, however, leakage of water around the well has permitted the growth of the vegetation, which may even threaten the windmill and tower which through the years had encouraged its growth.

Very specialized towers were required for the large-diameter "railroad-style" windmills which once were used on the New Mexico plains in large numbers. These mills, usually sixteen or more feet in diameter, originally evolved for use pumping water for steam locomotives and thus were termed "railroad" mills.

Towers for these especially large mills were made to withstand the extreme stresses and strains to which their mill were subjected. They were made from particularly heavy timbers. Since most standard towers could not provide sufficient clearance for the wheels on the large-diameter railroad-style mills, special "telescoped" towers were built to support them. Upward from the superstructure of the major towers, smaller "telescoped" towers extended to support the mills proper. Because special skill was required for the fabrication of these towers, the manufacturers occasionally even sent factory representatives to supervise their construction and erection.

Many of the new windmill towers that are appearing in New Mexico today are fabricated by local windmillers and well servicemen. From a distance they look like other four-leg steel towers, but on closer examination one sees that they are built from welded steel pipe. In semiarid New Mexico, where little moisture can accumulate inside the pipes, such towers should last for decades to come.

A small but increasing number of windmills in New Mexico have been placed on monopod steel towers during the past two decades. They are usually built from cast-off oil field pipe which has been firmly anchored in the ground adjacent to wells.

Perhaps the most exceptional use of a New Mexico windmill tower took place in Las Vegas a century ago. There a tall wooden windmill tower was erected over a well near the center of the plaza in Old Town. It had an unusually designed base, which doubled as a gallows. A writer in 1880 noted in an account of Las Vegas that the tower was the location of a "horrible sight this Spring, as on the night of February 9th the vigilantes hung one cowboy to the windmill, and laid his two companions out beneath him, riddled with bullets, because of their murder of Joe Carson, a few weeks previous." Another local resident later remembered that on one occasion when he went to his law office early one morning he saw "three outlaws hanging on this tower."

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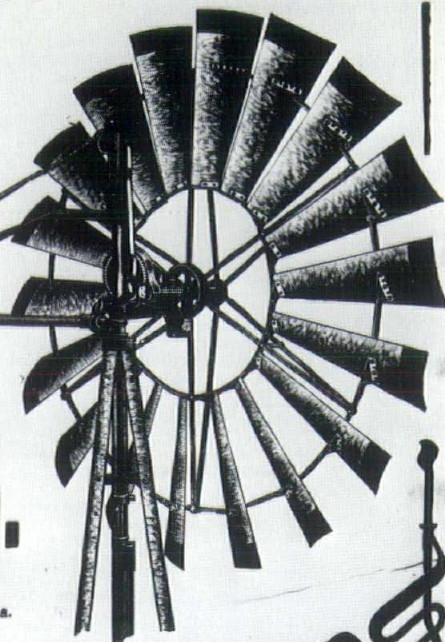
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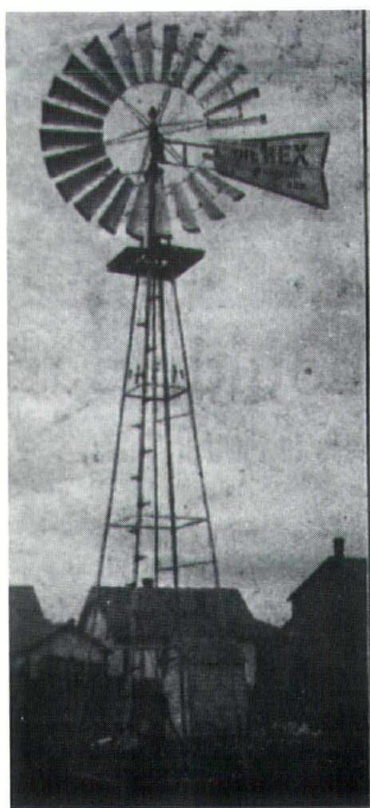
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Early-20th-century advertisement for "Goodhue" steel windmills and towers, which featured the company's own "windmill insurance policy." Courtesy Panhandle-Plains Historical Museum, Canyon, Texas.

For over a century windmill towers have constituted an important part in the built environment of New Mexico. With continuing need for their services in more remote areas coupled with increased energy awareness, windmills and their towers should remain part of the state's heritage of vernacular architecture for many years to come.

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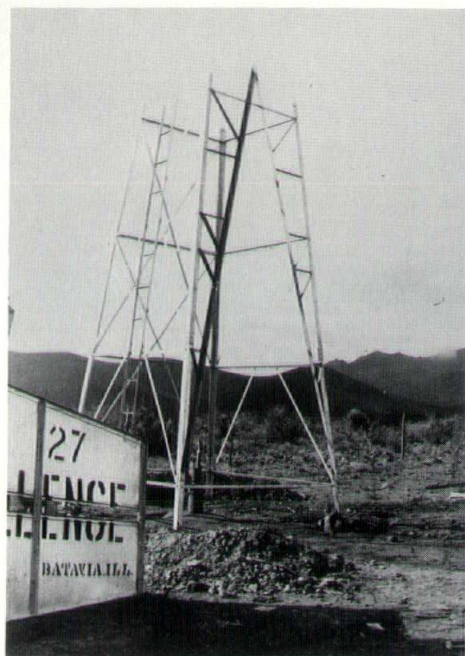
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Typical turn-of-the-century advertisement for windmills and steel towers. Courtesy Panhandle-Plains Historical Museum, Canyon, Texas.



Building a steel tower up one piece at a time in the Guadalupe Mountains of New Mexico/Texas in the 1930's. Photograph courtesy B. H. Burdick, Sr., and Panhandle-Plains Historical Museum, Canyon, Texas.

Use of a gin pole to lift windmill components to the top of a tower. Courtesy B. H. Burdick, Sr., and Panhandle-Plains Historical Museum, Canyon, Texas.



Century-old engraving showing a typical wooden windmill tower from the 1880's. From *Factory and Farm* (Chicago), VI, No. 1 (15 January 1880), p. 25, in Library of Congress, Washington, D.C.

SUGGESTED READING ON WINDMILLS AND WINDMILL TOWERS:

Baker, T. Lindsay. *A Field Guide to American Windmills*. Norman: University of Oklahoma Press, 1985.

Hays, Dick, and Bill Allen. *Windmills and Pumps of the Southwest*. Austin, Tex.: Eakin Press, 1983.

Windmillers' Gazette (quarterly magazine on windmills and wind power history), P.O. Box 7, W.T. Station, Canyon, Texas 79016.

Arizona Red, Flagstaff's Sandstone Industry

by Pat H. Stein

In 1892 the eyes of Albuquerque focused on the new building at the southwest corner of Gold Avenue and Fourth Street, for the activities to be conducted in it would shape the city's future. The building would house the Commercial Club (Fig. 1) (forerunner of the Chamber of Commerce,) a booster organization founded to attract and hold residents and capital investment. Replete with sumptuous meeting rooms, a dance hall, parlors, and business offices, the edifice was designed to host events to "boom the town." Through the turn of the century the Commercial Club would sponsor social events, business functions, and publications to promote the climate, cultural assets, and business potential of the city. The Commercial Club Building soon became a focal point for the community by virtue of its very architecture. Composed of a vibrant red sandstone, the building seemed to glow with its own light. The booster association could not have chosen a better medium to symbolize the energy, prosperity, and drive of this frontier city.

The construction material was sandstone from Flagstaff, Arizona Territory. The sandstone industry rose from the ashes of a series of fires that plagued Flagstaff in the 1880s. Located in the largest continuous stand of pine in the world, Flagstaff had a cheap and abundant source of lumber. But, as fires in 1884, 1886, and 1888 leveled block by block of frame structures, Flagstaff residents chose materials other than wood in rebuilding their homes and businesses. Brick became a popular alternative, and was shipped in and manufactured locally.

But there was another material, one that was as durable and attractive as brick, and that could be found literally at the town's doorstep. That material was Moenkopi sandstone, also called Arizona Red or Flagstaff Red sandstone. Known to local builders from the early 1880s, Moenkopi sandstone was first used for foundations rather than entire buildings. By the late 1880s, however, the flame-resistant material formed the main fabric of Flagstaff's new hotel, general store, and train depot.

The source of the sandstone was a high-grade deposit one mile east of town. In the mid 1880s an entrepreneur named Charles Begg became interested in the deposit and began to develop a quarry there (Fig. 2). In 1887 Begg patented the quarry and the 160 acre parcel in which it lay. He immediately sold the property, stone, and

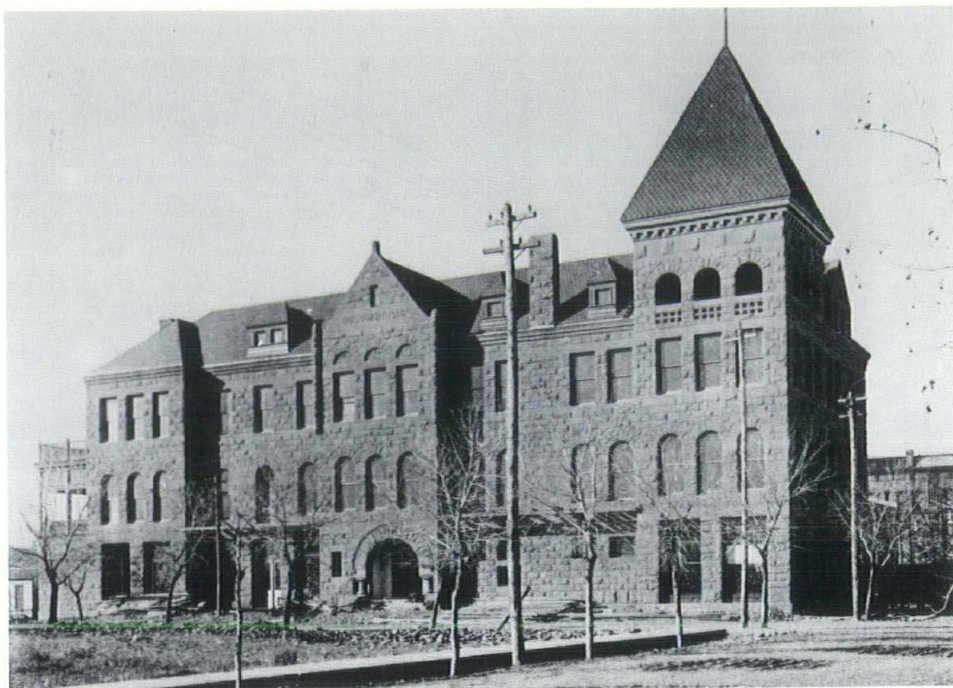


Figure 1. Commercial Club, southwest corner of Gold Avenue and Fourth Street, Albuquerque, New Mexico. Architect - Jesse M. Wheelock; Builder - Strong & Hesselden. Constructed 1892 - Demolished 1953. (Albuquerque Museum Photoarchives)

right to quarry the stone to a California businessman named L. H. Padgham, who retained Begg to be general manager.

The quarry began to expand its field of operations under the new ownership. The local newspaper reported that manager Begg made frequent and extended trips throughout the Southwest on business connected with stone contracts. A perceptive reporter in March of 1888 wrote that Begg had just returned from Southern California "looking as though he had enjoyed his visit." Indeed, he had. Begg had struck a major coup for the business: he had secured the contract to provide stone for the Los Angeles County Courthouse (Fig. 3).

As the first large-scale shipment of Moenkopi sandstone outside Arizona Territory, the Los Angeles County Courthouse contract marked the beginning of the boom period in Flagstaff's stone industry. And large scale it was: some 500 boxcar loads of the stone were to be shipped from the quarry to the building site over the course of the next two years. To prepare to process this volume of material, Padgham wrought many changes in his business. With associates Libby Hibben, W. H.

English, and S. B. Hibben, Padgham formed the Arizona Sandstone Company, with corporate headquarters in Santa Ana, California. He appointed his brother, A. J. Padgham, a Southern California jeweler, to be company president. A capable businessman, A. J. Padgham further promoted the stone by exhibiting samples in trade centers throughout the West. The new president immediately hired 20 additional quarriers and traveled to Cincinnati to purchase state-of-the-art equipment for working the Flagstaff deposit. It may have been during his Ohio trip that Padgham became acquainted with a young Scottish quarryman who came highly recommended by his recent employer, the Cleveland

Pat Stein is an historical archeologist living in Flagstaff, Arizona, and working for the Coconino National Forest. She became interested in Moenkopi sandstone while working for Janus Associates, Phoenix, on a National Register of Historic Places nomination for the Flagstaff Multiple Resource Area.



Figure 2. The Flagstaff quarry of the Arizona Sandstone Company, ca. 1890's. (Special Collections, Northern Arizona University, Flagstaff)

Stone Company. In late March of 1888, Padgham recruited the man, David Mitchell, to be operations manager of the Flagstaff quarry.

Mitchell was able to extract the stone systematically and in huge quantities, and it was under his management that the industry thrived. Megaliths as large as 36 by 16 by 12 feet and weighing as much as 730 tons were split from the deposit by means of explosive charges inserted in drill holes. Stonecutters then reduced the megaliths to blocks of 30 tons that were hoisted by either of the quarry's two steam derricks. During the peak period of the quarry, ca 1888 to 1910, the output was about four boxcars per day. The cost to clients ca 1897 was 35¢ per cubic foot for mill blocks "in promiscuous sizes", plus a sawing fee of 25¢ per cubic foot. In the 1890s, the stone industry ranked second only to the lumber industry in revenue generated for the town.

Mitchell's quarry provided not only a great quantity but also a high quality of the stone. Newspaper articles touted Arizona Red as a stonemason's dream:

"The stone is a beautiful...sandstone, rather soft when

first taken from the quarry, but hardens upon exposure to the air. It has been sufficiently tested to show that it is one of the finest building stones ever found."

"Arizona sandstone resists a strain of 5,800 pounds to the square inch, which will stand the weight of the stone in a column over a mile high without crushing...Owing to its fine texture and to its being void of sharp grit, Arizona sandstone has very few equals for ease in working. It has no superior for fine carving, admitting of very heavy relief and presenting clean, sharp edges. It is without doubt the best sandstone in the United States for figure carving."

Given these attributes and Mitchell's capable management, stone from the Flagstaff quarry became a highly-prized construction material of the American West. A railroad spur connected the quarry to the Atlantic and Pacific Railroad (later the Santa Fe) track in Flagstaff, and thence to cities throughout the West. Among the many buildings to be con-

structed of Arizona Red were H. C. Brown's Palace Hotel in Denver, the N. T. Armijo Building in Albuquerque (Fig. 4), the Spreckels Mansion in San Francisco, the Oregonian Block in Portland, the Los Angeles City Hall, and the Sacramento Post Office.

Mitchell's work force, which numbered as many as 80 men, consisted largely of stonecutters from Scotland and England. A settlement the size of Flagstaff grew at the quarry, where workers lived with their families or resided in a boarding house for single men. Life at the quarry was punctuated by occasional tragedy, such as the 1894 death of a Nova Scotian and the 1908 injury of an Italian, both the result of falling rocks. In 1909 Mitchell himself was the victim of an industrial accident when a derrick gave way and caught him under it. Miraculously, Mitchell sustained only bruises and a broken leg, but the incident appears to have hastened his retirement. In 1910 the master quarryman, then 50 years old, left Flagstaff to turn full attention to his Buena Park, California, ranch.

The departure of David Mitchell marked the beginning of a period of decline for the Flagstaff sandstone industry. A crisis

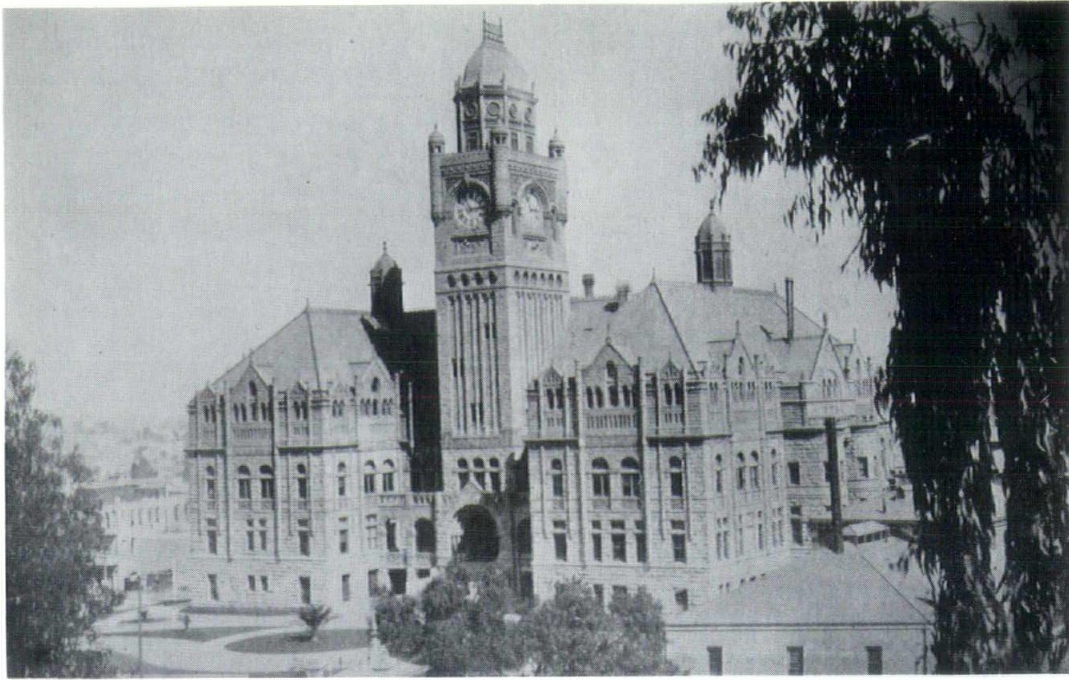


Figure 3. Los Angeles County Courthouse, ca. 1890. The Moenkopi sandstone was from the Flagstaff quarry. (Special Collections, Northern Arizona University, Flagstaff)

precipitated in 1910 when some Los Angeles contractors were unable to pay the Arizona Sandstone Company for materials delivered, forcing the latter to take out a large loan. When creditors called the loan, due a year later, the stone company was unable to pay. The quarry changed hands twice in the following year before it was repurchased by its company president.

As the company faced financial difficulties, demand for the stone declined. There is some evidence to suggest that a California stone producers' bloc successfully lobbied against the import of non-native sandstone, hereby cutting one of the company's prime markets. And architectural styles were changing: the Romanesque buildings that had lent themselves so well to execution in cut red sandstone were no longer in vogue. The



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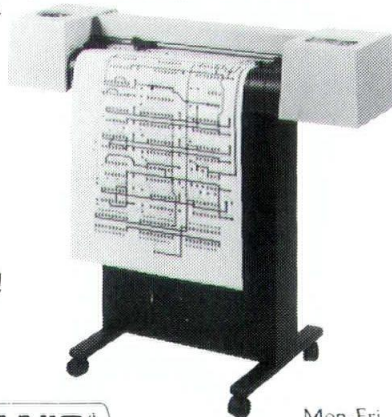
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technology of poured concrete and concrete block construction had progressed to the point where these materials could be used far more economically than Moenkopi sandstone.

After 1910 the main client for Flagstaff sandstone became the Northern Arizona Normal School (now Northern Arizona University, Flagstaff). Started in 1894 as a reform school, the facility used Moenkopi sandstone in the construction of its first building, Old Main. Continued use of sandstone in the twentieth century gave the campus a unified architectural appearance. Today NAU North Campus contains the largest assemblage of Moenkopi sandstone buildings, its structures spanning the period 1894 to 1948 and representing a variety of architectural styles. NAU also has the distinction of having the last building to be constructed of Flagstaff sandstone, the Science/Forestry Building, erected in 1948.

The quarry saw little activity in the 1920s. A decade later, the Great Depression brought work there to a standstill. The industry experienced a brief period of hope, however, as work relief programs of the 1930s were set in place. In 1935, the Public Works Administration provided funding for the construction of the Normal School's North Hall (Fig. 5), built of Moenkopi sandstone. A second public works program, however, took an unusual course. When plans were announced in 1935 to build a Federal Building/Post Office in Flagstaff, the original specifications called for the structure to be a brick with a partial facade of Indiana or Texas limestone. Congresswoman Isabella Greenway and Senator Henry Ashurst saw the project as a means to stimulate local industry, and pressured the government to change the specs to allow bidders to substitute Moenkopi sandstone for non-native limestone in their proposals. The government acquiesced, as use of local materials could be expected to lower the range of bids. The contract was awarded to Robert McKee of El Paso, who subcontracted with an Illinois company to do the stone work. The subcontractor found that the most expedient way of obtaining Moenkopi blocks at that time was to ship them from a building that had recently been razed: the Los Angeles County Courthouse. In Flagstaff the salvaged blocks were laid with their natural planes oriented in the wrong direction. The rock spalled and was replaced in the 1940s with Coconino sandstone, which has a pinker hue.

In 1938 the quarry and larger parcel in which it lies were sold to J. Howard Nickerson, a Cape Codder with speculative ventures in the West. Nickerson was joined a year later by his daughter, Virginia and her husband, Joseph Reid. Neither Nickerson nor the Reids were



Figure 4. N. T. Armijo Business Block, northwest corner of Railroad Avenue (now Central Avenue) and Second Street, Albuquerque, New Mexico. Architect - Jesse M. Wheelock; Builder - Berardinelli & Palladino. Constructed 1892 - Demolished 1969. (Albuquerque Museum Photoarchives)

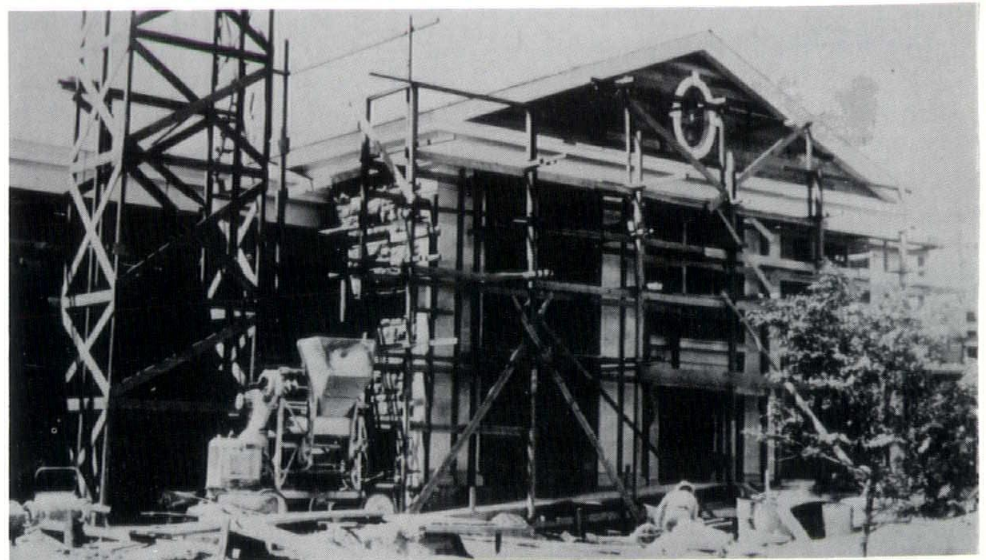


Figure 5. North Hall, Northern Arizona Normal School (now Northern Arizona University) during construction, 1935. This Public Works Project attempted to stimulate the local sandstone industry during the Depression. (Special Collections, Northern Arizona University, Flagstaff)

quarriers, and their interest in the property lay mainly in real estate development. During the Second World War the Reids donated the quarry equipment to the war effort. The metal derricks, rails and other stock were melted and recycled into armaments.

In the last two decades, the extraction of stone from the Flagstaff deposit has virtually ceased. NAU bought stone several years ago to repair the front steps of Old Main. The last time rock was quarried was in the late 1970s when the Santa Fe Railroad shipped three carloads for repairs at a Chicago station: the rock was used for a bench in the ladies' restroom of the

LaSalle Street Station.

The great stone industry that was once so vital to Flagstaff's economy is today remembered by few local residents. To those townsfolk who recall the quarry, still fewer realize the extent of its architectural legacy, that its rock traveled from the grand ballroom of a club in Albuquerque to the restroom of a Chicago train depot. And, like Albuquerque's Commercial Club and N. T. Armijo buildings (demolished ca 1953 and 1969, respectively), the structures themselves are one by one falling victim to the bulldozer and wrecking ball, one by one disappearing.

P.S.

JOHN McHUGH SUFFERS STROKE

John McHugh, FAIA, one of Santa Fe's most prominent architects, was struck down, but not out, by a stroke on July 5th. Undergoing therapy at Saint Josephs Hospital in Albuquerque, John is now on the way to recovery. Even in adversity his wit did not leave him. We all wish him well.

In a recent article in the Santa Fe *New Mexican* he was quoted as saying, "I enjoy being an architect so much. I feel sorry for anyone who isn't one". Well, if all were architects, what would there be for us architects to do? John, we expect you back to do more architecture for those unfortunate ones who are not architects.

JPC

Continued from page 9

The saying "pictures speak louder than words" holds true in the case of the book of 79 paintings of ranch houses on the Texas Plains. The artist, Mondel Rogers, strongly

influenced by Peter Hurd, usually paints with a watercolor air brush technique, although some of his paintings are egg tempera on gesso background. The 79 paintings featured in this book are all from the Texas Panhandle: Panhandle Plains, Stak-

ed Plains and Rolling Plains regions. Mondel, in the introduction, gives credit to New Mexican sheepman for building the first permanent structures in the western Panhandle. For those who cherish the old ranch architecture, this book is a must.

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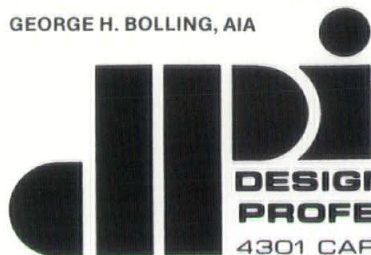
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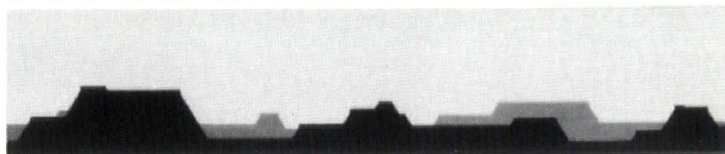
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INDEX OF FIRMS who make possible the publication of NMA and the page upon which their message can be found:

Albuquerque Gravel Products Company	5
Alexander & Alexander	23
Armijo Architectural Elements	7
Associated Systems	23
Bob Brazell Photography	5
Builders Block / Featherlite	10
Coating & Lining Technologies	22
Coating Technologies, Inc. & Advance Coating Systems, Inc.	4
Crego Block Co.	2
Crego Block Co.	24
Elco Distributing	4
El Rey Stucco Company, Inc.	6
Holman's, Inc.	18
Kitts Enterprises, Inc.	23
Kohler	Insert
Mason Contractors Association of New Mexico	8
New Mexico Travertine	6
Nickel's	18
Paxton, Frank, Lumber Company	7
Pella Rio Grande Inc.	4
Plant Designs	5
Santa Fe Lights	5
School Equipment Inc.	22
Signal Systems	23
Signs Now	5
Sundeck Products, Inc. - Tierra Decking	6

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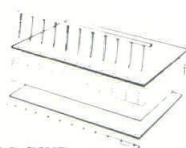
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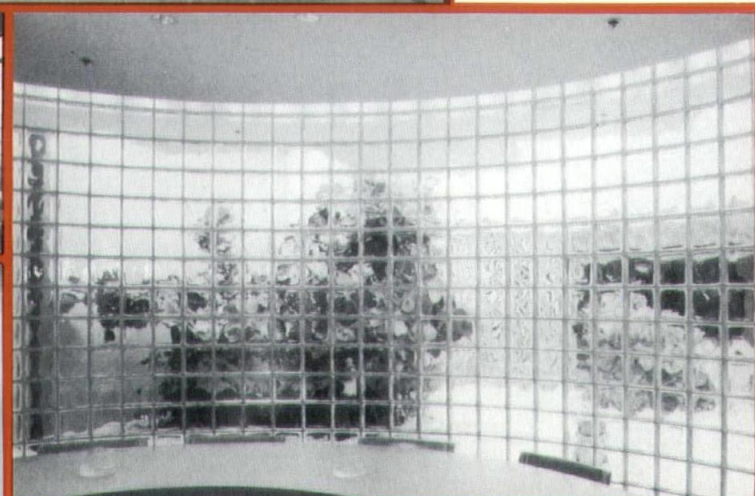
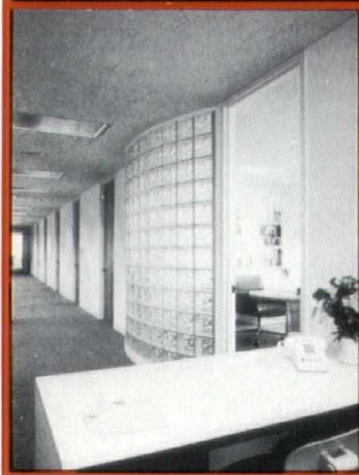
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